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THIRD SERIES VOL 58 NUMBER 6 APRIL 1951

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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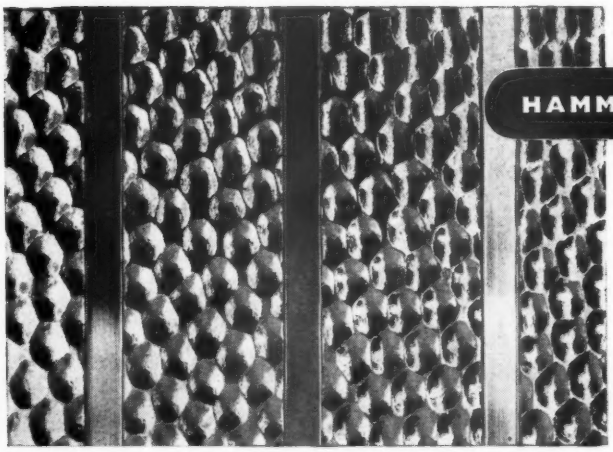
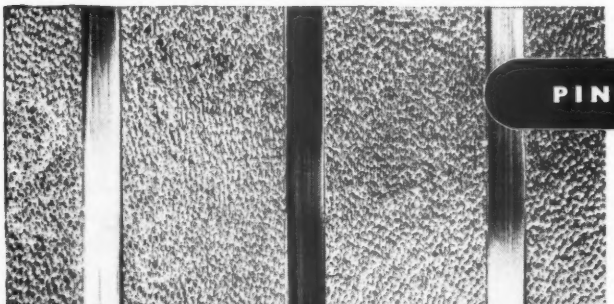


HAMMERSTRIPE

A Figured Rolled Glass of the Formal Group. Diffuse light transmission — 82 per cent. So far as diffusion and obscuration is concerned, the glass corresponds closely to its own parent, No. 3 Hammered. The superimposed stripe has less effect on the diffusion than it has on the obscuration powers of the glass.



PINSTRIPE

A Figured Rolled Glass of the Formal Group. Diffuse light transmission — 82 per cent. So far as diffusion and obscuration is concerned, the glass corresponds to its own parent, Pinhead Morocco. The superimposed stripe has less effect on the diffusion than it has on the obscuration powers of the glass.

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The Duke of Wellington, K.G.

His Majesty the King has conferred upon the Duke of Wellington [*Ret. F*] the Order of Knight of the Garter.

The British Architects' Conference

Two recent Conferences have coincided with the centenary celebrations of the Allied Societies who acted as hosts. This year the Royal Society of Ulster Architects have reached the half way mark and are celebrating their Golden Jubilee. The Conference Committee of the Society has prepared a programme of events appropriate to the occasion which promises an interesting and enjoyable time for members, especially those from Great Britain.

Realizing that members arriving from Great Britain by sea on the first day will reach Belfast in the morning, the Conference Committee has arranged a series of tours in the afternoon. Two of these will give members a first view of the lovely scenery of Northern Ireland; the third is a stroll round the civic buildings of Belfast. All members will meet together at an informal reception in the evening at which the R.S.U.A. will be the hosts.

In addition to the Inaugural Address by the President, two papers will be read and discussed. The first will be on 'Architectural Education' by Mr. Martin S. Briggs [*F*], Honorary Secretary R.I.B.A. and Past-Chairman of the Board of Architectural Education. The second will be on 'Industrial Buildings' by Mr. Frederick R. Wylie [*F*]. Mr. Wylie is a member of the firm of Wylie, Shanks and Wylie practising in Glasgow.

The Conference garden party is being held at the Parliament Buildings, Stormont, where the Prime Minister and Government of Northern Ireland will be the hosts. Coinciding with the Conference is the opening of the Northern Ireland Festival of Britain Exhibition. This is the Ulster Farm and Factory Exhibition, and it is one of the highlights of the Festival programme, the indoor display covering 20,000 sq. ft. of floor space and the agricultural side being the largest of its kind for the Festival in the United Kingdom. A Saturday morning tour covers this.

There will also be an architectural exhibition near the city centre. This is sponsored by the Arts Council and has been completely designed and organized by the R.S.U.A. Members who wish to attend the Conference should return the form enclosed with the last JOURNAL not later than 7 May.

The late Mr. W. P. Steel

We regret to record the death on 5 April of Mr. W. P. Steel who was Assistant Librarian at the R.I.B.A. from 1918 to 1939. He was 73 years of age. A memoir will be published in the next JOURNAL.

Mr. Sydney Tatchell

On 16 March Mr. Sydney Tatchell, C.B.E. [*F*], presided for the last time at an ordinary general meeting of the Architects' Registration Council. After the meeting the Council assembled in the Foyer of the Henry Jarvis Memorial Hall in the R.I.B.A. and a clock was presented to Mr. Tatchell as a memento of his chairmanship since 1935. The presentation was made by Major G. B. J. Athoe; other speakers were Mr. E. D. Jefferiss Mathews [*F*], Vice-Chairman, and Mr. Gordon Jackson [*F*]. The clock is a reproduction of an 18th century chiming clock by Frodsham and Co. A silver tobacco jar was also presented to Mr. Tatchell by members of the staff of A.R.C.U.K.

Mr. Tatchell said he was immensely touched by the confidence and support which the Council had given him for so many years. They could be proud of the fact that on the basis of the Registration Acts had been built up a working system of architects' registration which was of great importance not only to the profession but also in the national life. The establishment of this efficient system was a real achievement and had not been without occasional difficulties. Mr. Tatchell said the profession was greatly indebted also to the staff of A.R.C.U.K. and specially to the Registrar, Mr. Pembroke Wicks.

We are sure that members generally will warmly support the thanks offered to Mr. Tatchell by the Registration Council. He has held his responsible office on behalf of his fellow practitioners for 16 years with tact, firmness and wisdom. His work is something of which we—and Mr. Tatchell himself—may well be proud.

At the annual meeting which followed the presentation ceremony, Mr. E. D. Jefferiss Mathews, O.B.E., A.R.I.C.S. [*F*], was elected Chairman and Mr. Denis Poulton [*F*] Vice-Chairman.

Mr. T. R. Eltringham, M.V.O., O.B.E. [*F*]

At a private investiture at Buckingham Palace on 15 March the King conferred the M.V.O. on Mr. T. R. Eltringham [*F*]. This award was principally in recognition of Mr. Eltringham's architectural work in connection with maintenance at the royal palaces, particularly Buckingham Palace. Mr. Eltringham has recently retired from the Ministry of Works after 40 years' service, having entered the former Office of Works in 1911. Prior to his retirement he held the post of Assistant Chief Architect in the Ministry, where he has also been President of the Maintenance Surveyors' Association, Chairman of a Branch of the Ministry of Works' Social and Athletic Club and a member of the official side of the Departmental Joint Industrial Council.

British Standards Institution Jubilee

In 1901, Sir John Wolfe Barry, a past president of the Institution of Civil Engineers, was instrumental in setting up a committee of six members of the Institution, to standardize steel sections. In the course of time that Engineering Standards Committee became the British Standards Institution, who, therefore, are holding their jubilee this year, and as part of the celebrations an exhibition will be held in the Science Museum, South Kensington, opening on Monday 18 June next, and closing on 28 June. The title of the exhibition will be 'British Standards—the Measure of Industrial Progress.'

The purpose of the exhibition is to show the advantages that come from standards, standardization and simplification, and the various sections of industry will demonstrate how standards have simplified production, reduced costs, and maintained quality, to the benefit of users.

By 1905 the number of published specifications was 24; today there are current some 1,500 general standards and 200 special standards. All who have benefited from British Standards will wish success to the exhibition.

The A.B.S. Centenary Appeal

Readers will have gathered from seeing the lists of donations published in the last five JOURNALS that there has been a splendid response to the A.B.S. Centenary Appeal for Old People's Cottages. Up to 29 March a total of £6,732 5*s*. 7*d*. had been received. In this the individual donations of members have been as important as the collective efforts of the Allied Societies and the larger offices. The President's suggestion that this is 'a true architectural solution to an architectural problem' has clearly appealed to the imagination of the profession.

But there is still a considerable gap to be filled before £50,000 —the sum required to build and endow the scheme—is in the coffers of the A.B.S. A very good start has been made, but it is only a start. We hope, therefore, that the very many architects who have been active in collecting money in the Allied Societies and larger offices will not relax their efforts and that individuals, when from time to time they take out their cheque books, will remember the A.B.S.

Charity Film Performance

From Manchester comes news of an enterprising—and enjoyable—means of raising funds for the Architects' Benevolent Society. On 2 March the Manchester Society of Architects organized a Charity Film Performance, which attracted an audience of over 400 and realized a net profit of £78. The film shown, by kind permission of the Twentieth Century Fox Film Company Limited, was the clever and successful satire *All About Eve*, and the Regal Cinema, Manchester, was hired for the occasion at a reduced charge.

The Manchester Society says modestly that 'the effort seems to have been thoroughly appreciated and enjoyed, and has produced a reasonable contribution for the Benevolent Society's special appeal.'

The Bath Assembly: Architectural Exhibition

In connection with the Bath Assembly, which takes place from 20 May to 2 June, an architectural exhibition is being staged at the Octagon Chapel, Milsom Street, Bath. It is being organized by Mr. Ernest F. Tew [*A*], who is a member of the Assembly's Council of Management, with the help of the Bath Group of Architects. Reproductions of maps of Bath from Roman times, all at the same scale, will be on view together with a new architectural map of Bath, relating the exhibits to the actual buildings to be seen in the city. Thus the exhibition will serve as a key or guide to visitors to the many architectural glories of Bath. During the Assembly, Mr. John Summerson [*A*], Curator of Sir John Soane's Museum, will lecture at the Pump Room on 'Bath Architecture in European Perspective'.

Economy Memoranda and Enforced Use of Sub Standard Materials

The Allied Societies' Conference, at a recent meeting, discussed memoranda issued by the Ministry of Works on economy in building materials, particularly in the use of soft woods. Possible methods of economizing mentioned were by a reduction in scantling sizes and the wider spacing of ceiling joists and rafters. The Conference felt that some degree of reduction might have been allowable and consistent with good practice if there had been no reduction in the performance standard of materials. This is, unfortunately, not the case and the great majority of timber now available is of such low standard that any reduction on the lines indicated leaves little margin for safety.

The Conference considered that caution should be observed in reducing standards in view of the possibility of structural failure for which the client and the public might blame the architect, with consequent damage to the reputation both of the individual architect and of the profession generally.

The Conference also discussed the shortage of other building materials and reference was made, among other things, to the recent ban on the galvanizing of metal windows.

The Council have approved a suggestion that the attention of members should be drawn to this matter. Where the client or local authority enforces such economy measures, the architect is advised to make a point of sounding a warning and disclaiming responsibility in cases where, in his opinion, the application of economy measures leaves a dangerously small safety margin.

Employment of Students in the Vacation

With the approach of the summer vacation the attention of members is again called to the scheme for helping students to gain practical experience in architects' offices between the months of June and October. Since 1947, when the scheme was initiated, the number of members notifying the Institute of their willingness to offer such employment has been gradually diminishing; and for the last two years it has unfortunately been necessary to disappoint several students. It is very much hoped that the response this year will be sufficient to enable all students who apply to be accommodated. Members willing to co-operate in the scheme should notify the Secretary without delay, giving particulars under the following headings: (*a*) period for which employment is offered, (*b*) number of students that can be employed during the period, and (*c*) remuneration offered.

The York Summer Schools

The Summer School of Architectural and Historical Study, to be held at York from 11 to 25 August, has an interesting programme. The School is specially intended for students of schools recognized by the R.I.B.A., and arranges lectures and visits together with facilities for sketching and measured drawing. Among the lecturers are Mr. John Summerson [*A*], Professor Gordon Stephenson [*F*], Mr. J. Brandon-Jones [*A*], Professor Geoffrey Webb [*Hon. A*], and Mr. John H. Harvey. The lectures will be held at 5.30 p.m. each day; during the mornings and afternoons students may work either independently or in groups and under a tutor or on their own. Preference will be given to students who wish to make measured drawings for the R.I.B.A. Intermediate Examination. The Director of Studies is Dr. William A. Singleton, M.A., B. Arch., Dist.T.P. [*A*]. The fee for the School is £4 and residential accommodation will be arranged by St. John's College, York, at £4 per week.

R.I.B.A. Diary

TUESDAY 1 MAY 6 P.M. Annual General Meeting.

FRIDAY 18 MAY 8.15 P.M. TO MIDNIGHT. The R.I.B.A. Annual Reception.

WEDNESDAY 30 MAY TO SATURDAY 2 JUNE. British Architects' Conference, Belfast.

Presentation of the Royal Gold Medal for 1951 to E. Vincent Harris, O.B.E., R.A. [*F*]

At the R.I.B.A. 3 April 1951. The President in the Chair

The President: Almost fifty years ago—to be precise in 1903—the Royal Academy Gold Medal was awarded for a design of a domed church. THE BUILDER illustrated the winning design and also one of the unsuccessful ones. Of the winning design THE BUILDER stated that it was a rather commonplace piece of Renaissance design and gave little evidence of architectural genius. On the unsuccessful design illustrated the comment was that there was more of the quality of architectural genius in that less ambitious scheme, and further that it was a design 'of considerable character'. I need scarcely add that the author of the unsuccessful design was the architect to whom we do honour tonight.

Perhaps the really notable thing about this incident, viewed in the light of later events, was not this early recognition of the abilities of Mr. Vincent Harris, but the fact that he failed to win this competition! I hope that the medal which he is to receive tonight will in some way compensate him for the loss of the Royal Academy Gold Medal. I take some credit to myself that the qualities referred to by THE BUILDER had impressed me to retain a clear memory of the design which, as far as I am aware, was the first work by Mr. Vincent Harris which was illustrated.

I need scarcely remind you that the Royal Gold Medal is the most highly prized award which can be given to any architect. Instituted in 1848 by Queen Victoria, it has been awarded annually by successive Sovereigns on the recommendation of the Council of the Royal Institute of British Architects. The list of the recipients includes not only practically every outstanding British architect, but also a very representative selection of foreign architects. This year the Council unanimously recommended to His Majesty that the Royal Gold Medal should be awarded to Mr. Vincent Harris, and the King has been graciously pleased to approve this award.

It is not my function tonight to speak of the outstanding quality of the work in recognition of which the Royal Gold Medal for 1951 has been awarded. My duty and privilege is to introduce the speakers who will, I know, voice our appreciation of that work far more adequately than I can do. I should, however, personally like to say how delighted I am that Mr. Vincent Harris has received this award, and to congratulate him on it.

Sir Gerald Kelly [*Hon. F*], **President of the Royal Academy:** In my ignorance I had no idea what a distinguished gathering this would be, and I am sorry to say I am not a very serious person. However, I did one serious thing and that was to ask whether it was quite certain that Vincent Harris was going to have this medal, and whether anything I said in my speech would invalidate the affair. I was assured that the King had made the award and therefore anything I say you will readily understand is in the Pickwickian sense.

I like this man! I know my taste is peculiar, but I have very rarely had such pleasure on opening my morning paper as came to me when I read that Vincent Harris had been awarded the Gold Medal.

So we will take Vincent Harris's position as an architect as established without any help from me. Those of us who know him —and I think that he is a very difficult man to know—end up by finding ourselves loving this obstinate, irascible and tiresome man! At any rate, we shall have to pretend to like him now because he has got a Gold Medal, and in the Royal Academy he has got all our money. It is fitting that I should be here to speak for the Treasurer of the Royal Academy, because I am the President of that Institution.

Dr. John Murray, M.A., Principal of the University College of the South West of England: I feel it a great honour to be invited to the presentation of His Majesty the King's Gold Medal to Mr. Vincent Harris, and still more to have the privilege of saying a few words. He is a friend of very long standing, for whom my admiration and trust have grown steadily with time. He and I have collaborated for twenty-five years in the development of the University College of the South West of England at Exeter, a very long title for a young though growing institution. I am aware that his building for this college, while all-important for us, has been only a very small part of his total work, and therefore I feel all the more honoured to be able to say something about it.

His problem at Exeter was as difficult as it was intriguing. The college campus of 120 acres is a descending spur of the hill above Exeter. The hill rock is of the worst, a soft wet treacherous shale upon which no architect could really depend; but when all is finished one day, according to the layout which he has prepared for us, the *ensemble* of buildings will make a memorable solution of the architect's problem.

Mr. Harris has shared in the vicissitudes of the college. His first building for us was the Washington Singer Laboratories for physics and chemistry. It was to have been an arts block, and it was to have been of brick. Then it was to be of stone, and then it came back to brick. In the end it went into science instead of arts! It was built in stages, the foundations first of course, and the foundation stone was laid by the Duke of Windsor. The foundations exhausted the college funds, and stood deep in the abundant rain of Devon for years, until money could be gathered from Mr. Washington Singer and other donors. But all's well that ends well, and the two sciences entered into their palace in 1931.

We owe to Mr. Harris an exemplary library, a huge, uplifting, and beautiful reading room with a basement of stacks. The reading room, by its proportions, its style, and its spirit, is one of the most humanising and refining influences in the college. The novel building he now has in hand for botany and zoology will strike the imagination of many scientists.

One word about a building which is still a dream. Mr. Harris has promised the college a gift, the Mary Harris Chapel in memory of his mother. She lived in the flesh to 102. In the spirit, by virtue of her son's work, she will live on in college minds through the centuries. The college already holds in trust many thousands of pounds from Mr. Harris for this purpose. Lucky the college that can find an architect of his calibre! Do you wonder that I welcomed the invitation to come and speak here tonight?

Exeter is not too rich in architecture. It has the cathedral, the guildhall, and some almshouses and churches. Many of the fine Georgian dwellings were destroyed in the bombing. Mr. Harris's buildings for the college set the city a high standard. They are austere without being plain or bald. A manly reticence shines from them. Not one of them but has distinction and a grave beauty. He manages to combine large and orderly ideas and a genius for proportions with extreme care and resourcefulness in the details. His big mind and firm purpose range happily and creatively throughout the entire gamut of architectural invention.

I have often had reason to be thankful for the firmness of his mind. He has a gift with committees—he ought to have! There are committees and committees. He is not always firm, however, or too firm. When the Washington Singer Laboratories were projected, I asked him if he had ever noticed the Scottish weakness for built-out staircases in the round. He had, and I hoped privately that he might find a place for one. He built two at the back and I was delighted. I showed an Oxford friend, a Professor of Hebrew, round the building, the front wholly Mr. Harris's work, and the back in which I had had a hand, and I told him the tale as we viewed the two outside staircases. 'Yes', he said, 'I thought it had an amateurish look'! But he was wrong. Mr. Harris, I maintain, used the Scottish idea with perfect skill. It is a thoroughly successful back in all points but one. The two staircases, alas, are square and not round!

Mr. President, I thank you again for permitting me to speak tonight.

Sir Basil Gibson, O.B.E., J.P.: More than a quarter of a century has passed since Mr. Vincent Harris and I met in Sheffield for the first time. We made, I think, an interesting contrast. I was then a solicitor, a subordinate public official of that provincial city, and he was the London architect who had won the competition for the public hall of which the city council and the people of Sheffield had been dreaming for so long. I may say that in Sheffield in those days we did not see many London architects, so when we did see one we had very great respect for him. The only hall in the city to which the famous artists and politicians of the day could be brought had been converted into a picture theatre, and for years we had been deprived of pleasure, entertainment and instruction, and, indeed, of all those cultural influences which flow from the use of a large public hall which every community needs for its daily life.

Sheffield was, therefore, glad to meet Mr. Harris, and like all Yorkshiremen they wanted to know what sort of a man he was. They found him to be exceedingly courteous and patient, flexible yet firm, daring in his conceptions, persistent in his efforts, persuasive, and attentive and responsive to all suggestions. He had one great virtue, he was never difficult.

Mr. Harris was warmly welcomed, and during his long association with the city he never lost the favour, the goodwill or the appreciation of the Council. They survived all the shocks he gave them, and it is a tribute to his personality and his sense of the fitness of things that the relationship between the Council and himself was at all times harmonious.

The site of the proposed public hall had been selected by the Council after it and all other possible sites had been surveyed by experts. It was a peninsula and it was considered to be a very good site. You can imagine the sensation Mr. Harris caused when he challenged the suitability of the site and invited the public hall committee to reconsider it. Whilst agreeing with its location, Mr. Harris declared this particular peninsula was most unsuitable for the proposed monumental building. He strongly recommended an island site and produced a plan illustrating his argument. After much discussion and with some chagrin Mr. Harris's recommendation was accepted, and the Corporation promoted a Bill in Parliament to obtain compulsory powers to acquire the further property required to convert the peninsula into an island and to construct additional highways. I give this as an example of his persistence and persuasiveness.

After disposing of the problem of the site and making substantial progress with the plans, Mr. Harris gave us another shock. He declared that the building as proposed made an inadequate use of the site. In his view the building ought to be used regularly whereas if it included only the two halls as originally proposed it would be used only occasionally. This argument was readily conceded, but the difficulty was the additional cost, which would be considerable. However, his recommendation was accepted and three halls were added to the former two. I give this as an example of Mr. Harris's foresight, for it has turned out that whilst the two original halls are used frequently they are used far less than the three additional halls, which are in almost daily use.

Now for a third shock. My desultory reading has yielded the information that it was the custom of the early Assyrian temple builders to guard their buildings by sculptured demons set up at the main entrance to the temple. These figures protected the temple from all manner of evil influence. Viewed from the front they were standing; from the side they were in motion, this effect being secured by the device of a fifth leg.

The focal point of the Oval Hall is the entrance to the platform. Everyone seated in the hall has a clear view of this point. On one of my visits to the hall I noticed that work was proceeding on the side walls of the entrance. On my next visit a pair of Assyrian lions, standing and in motion, were in position. Carved from Derbyshire marble, they are magnificent beasts, fierce, massive and dominant. Immediately I saw them I knew something would happen. When the public hall committee saw them they were staggered. When the public saw them they were amazed. These beasts not only excited wonder; they created a storm which has not yet entirely abated. Although threatened with liquidation many times, they are still in position glaring fiercely at their critics. Sir Thomas Beecham, when he goes on to the platform, regularly salutes them! In this way Mr. Harris linked up the pagan Assyrians of the Third Millennium with the Christian Sheffielders of the 20th century, and they do not know yet why they were so linked up! I give this as an example of Mr. Harris's courage and versatility.

By way of a tailpiece I should say that it would almost appear that the virtues with which these figures were invested in ancient days were not ineffective, for was not the World Peace Congress which opened last year in Sheffield in this very hall, and which was to be continued for several days, dispersed in one?

Opened in 1931, the Sheffield City Hall is the pride of the citizens and they are delighted to take their visitors to see it. The hall meets all the needs which it was erected to fulfil. Its burden on the city rate is small. It stands as a memorial to the genius of Mr. Vincent Harris and it is due to him that it stands on a suitable and adequate site, is a balanced undertaking and one which is efficient and economic to run. The user is ennobled and enriched by its irresistible and penetrating power, and as thousands go to it yearly its influence on the character of the people of Sheffield is incalculable.

I need no authority to say that I bring with me to this assembly the warmest greetings of the people of Sheffield and their congratulations to Mr. Vincent Harris. We were all delighted when we read that the Royal Gold Medal had been awarded to him. We take great pride in his achievements and we regard it as particularly encouraging that his activities are so widespread in the provinces.

If I might end on a personal note I should say that with our first meeting there commenced a friendship which has continued without interruption and impairment to this day. For years we met almost weekly, and also outside the municipality we found a common interest in Sheffield, in its industries and their origin, in its

people and their traditions and their talk and their stories. I am not a fisherman—as I believe Mr. Harris is—I have no knowledge of medieval architecture and very little knowledge of art, consequently many doors which are wide open to Mr. Harris are closed to me. But we understood one another, we respected each other, we were both tolerant and appreciative, and no one received the news of this award to Mr. Harris with more enthusiasm than I. I am indeed very proud to be present when he receives the greatest honour his professional brethren can confer upon him, and I tender my most grateful thanks to you all for giving me the privilege of being here.

Mr. Robert Lyne, Lord Mayor Elect of Bristol: May I in the first place say how sorry I am that the Chairman of my Committee is unable to be here today on account of age and difficulties of weather. He has been concerned with the municipal buildings, for which Mr. Vincent Harris is responsible, for a considerable number of years, and it is indeed with very great regret that he has been unable to be here and pay the tribute which he would have wished to Mr. Vincent Harris on this great occasion.

I have had the good fortune to have been associated with the work of building our new Council House for a considerable number of years too, and I have had the pleasure of meeting Mr. Vincent Harris quite a lot. I remember that on the first occasion on which he was good enough to come and stop with us I realized that he really was in some respects a very wonderful man. It was in the depths of winter and most of the water in our house had frozen up. When Mr. Vincent Harris broke the ice so as to shave and then bath, I realized that I was in the presence of someone who indeed was remarkable!

Vincent Harris is also remarkable in another way—in the way he produces things. He does this like a very superior conjuror. The ordinary conjuror merely produces rabbits out of a hat, whereas all of a sudden, whilst Mr. Harris was holiday-making in Italy, there came two marvellous unicorns! Everybody says that they are very beautiful indeed, and Mr. Harris convinced us all that they ought to be there and always ought to have been there, and what Mr. Harris can do with a committee is something no committee-man can do at all!

We are intensely grateful to Mr. Harris. Bristol is a city which is soaked in tradition and is very precious to its inhabitants, but we have in fact, after many years of discussion, placed at his disposal one of our most precious pieces of the city. Flanked as it is by the cathedral, associated, rightly or wrongly, with the name of St. Augustine and the meeting with the Welsh Bishops (whether it took place there or not, it certainly looks the kind of place where it should have taken place) it was necessary to create harmony on this very precious place with the cathedral and with the busy traffic which goes by. Just at the moment it does not look too well because the green has been lowered a matter of five or six feet and bulldozers have got busy. There was a great fuss in Bristol about that, but people more and more are convinced that in fact a great work has been done there under the guidance of Mr. Harris. To alter one of your most precious landmarks was not a thing to be undertaken lightheartedly, or a thing you would expect to be readily accepted. However, more and more he now has public opinion behind him, and we look forward to the time when that great work will be completed. How long it will be we do not know. It depends on the way in which permits are forthcoming; but Bristol is a far-seeing place, and I think I can say this with some confidence, that by the time the next Festival of Britain comes round in 2051, the building will be completed! Mr. Harris will not be there in the flesh, but I have a mental picture of him sitting looking down on this garden of Eden—sitting on his unicorns (he will need to be a split personality to sit on both) wearing his Gold Medal instead of a fig leaf! I do not know; perhaps we ought to give him two Gold Medals in advance!

I want, Mr. President, most sincerely to say how intensely grateful we are to Mr. Harris, how proud we are of his work, and how we hope that he will live long to enjoy the honour which is going to be conferred upon him today; in which we are proud to feel, because of his association with our building, that we share a small part.

Sir Percy Thomas, Past President: I always think that the Gold Medallist's ordeal of receiving the Medal is nothing compared with listening to his clients up here—not so much due to the things which they do say, but fear of what they might say!

I imagine the President has asked me to say a word, now that the President of the Royal Academy and the clients have had their say, as a contemporary of Vincent Harris and a fellow competitor over many years.

Vincent Harris made his mark, like so many members of this Institute, through the medium of the open architectural competition, and his earliest successes happened to be in my own city of Cardiff. There is the Glamorgan County Hall, which many of you know, and which has a rather wonderful piece of sculpture by Hodge, in whose death we lost one of the finest architectural sculptors we have had for many years. Also in Cardiff we have a fine fire station which I think is probably one of the best buildings of its type in the whole country. I speak feelingly about that because I was second in the competition, and every day when I go into my club for lunch I see it right opposite.

The last time I remember competing with Vincent Harris was for the Board of Trade buildings which he is now erecting on the Embankment. Probably some of the younger members will be amused to learn that the time of that competition was 1914, so it has taken some time to come to maturity. I think that about a year later was one of the very rare occasions upon which I was placed above Vincent Harris. It happened at Gidea Park. I was a sergeant in the Artists and I was looking into a trench which some new recruits were digging and I found Vincent Harris among them.

I shall say very little of his work. We of his age know and admire it. It has a breadth of simplicity which always makes it beautiful and removes it from the commonplace and the orthodox. I think that his elevations, whatever the modern generation may think, were quite easily the finest between the two wars, and his planning, which we forget about sometimes, will stand comparison with any in any age.

I have only to add my own congratulations to Vincent Harris, whom I have known for many years, on at last receiving this Gold Medal, and to the Institute for their recognition of his very fine work.

The President: I now call upon Sir Percy Thomas and Mr. Edward Maufe, two past Royal Gold Medallists, to escort Mr. E. Vincent Harris to the platform.

Mr. E. Vincent Harris: I think you will agree that the position of anyone who is presented in the name of our gracious Patron with the Royal Gold Medal of Architecture is one of some embarrassment. I do not know whether this inherent difficulty could be made easier by the kindness of the terms in which it has been presented to me tonight. You, Sir, and my sponsors have spoken in most generous terms on a theme which is personal to me, and on which I really can not dwell or easily pass any observations which would not be out of place. I must say, however, that it is something to be praised by the President in the presence of your fellow craftsmen, for to be praised by the President is to be praised by the head of one's profession, and that I think is a landmark.

Behind all that has been said lies clearly the belief which we architects have in the work of the Royal Institute of British Architects, to which we all belong and to which each and every one of us owes allegiance. The democratic spirit of this Institute and what it stands for in architecture is worth reflecting upon and worth consideration on an occasion such as this. This Institute was founded on faith, and it can only be sustained by faith. Today we are being urged to attempt a new architecture, free from architectural tradition. This Institute has never pretended to be a source of architectural criticism in the sense of judging what is good or what is not good in architecture. I think that the bond which unites its members is the bond of architecture. That does not mean to say that each architect agrees with this or that individual architect's work, but it does mean that between each and every architect there is that bond of architecture. When the work which is now held in abeyance owing to the rearmament programme springs into life again, I hope that the new architecture will gain inspiration from the past and create the forms of the present.

May I again thank you Mr. President for the prized honour which has come to me from your hands tonight, and say how very proud and honoured I feel when I think of those with whom you have seen fit to brigade me tonight.

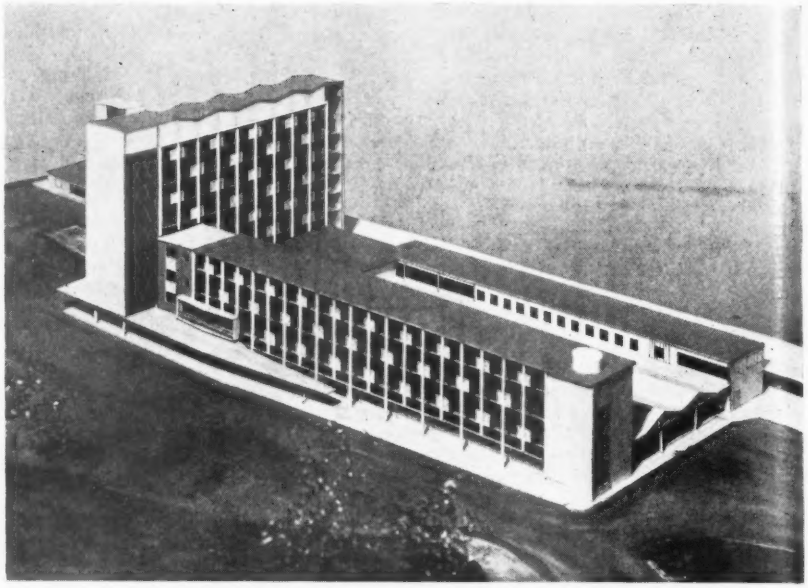
Two New Stations of British Railways

Architects' Office, Railway Executive, Western Region

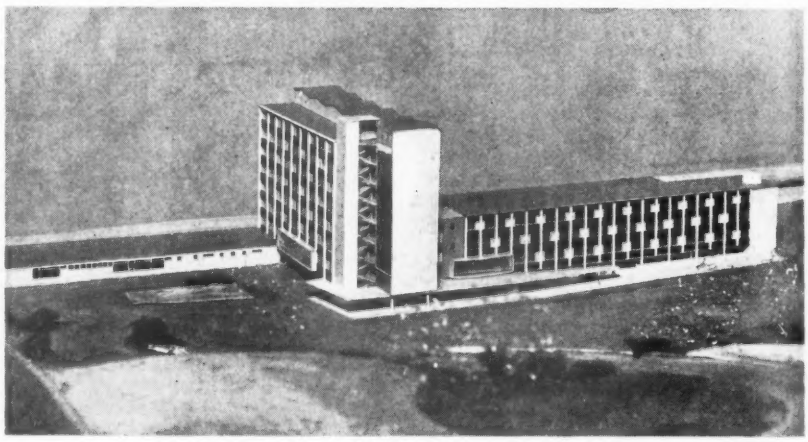
Architect: H. E. B. Cavanagh [*A*]

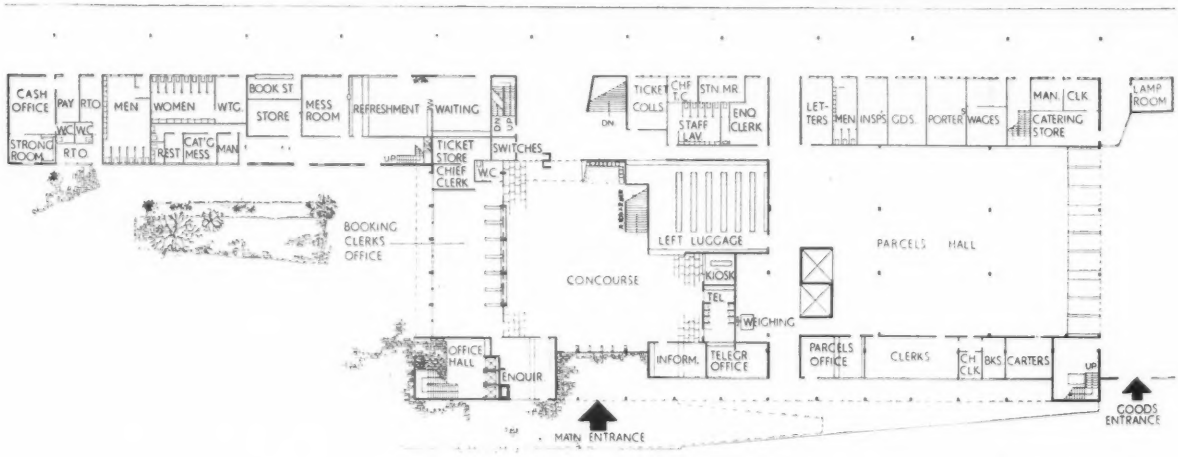
Plymouth North Road Station. Assistant Architect: Ian Campbell [*A*]
The old Millbay terminus was originally the principal station for Plymouth, and trains to this terminus, and those going on towards Penzance, passed through North Road station, but in recent years the effects of the last war have reduced the traffic to Millbay docks from north European ports. The traffic to Devon and Cornwall, however, has increased, and as this passes through North Road station a scheme was prepared in 1937 for the enlargement of the station and for the provision of a parcels depot and divisional offices, as it was decided to concentrate the district administration at the station buildings.

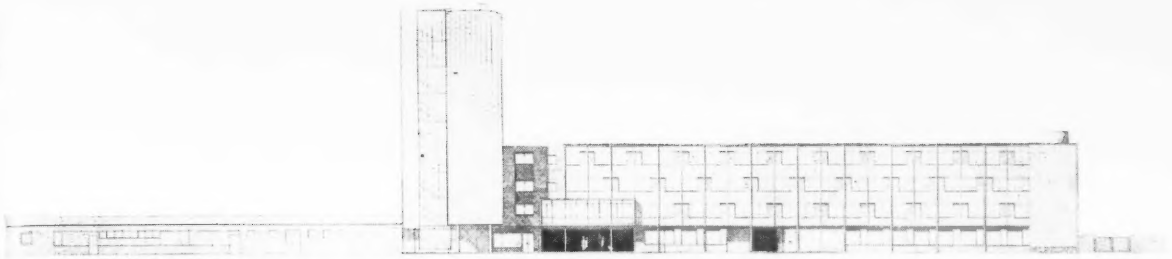
Progress was made on the engineering and minor architectural work; additions and alterations to the lay-out of the track were completed, and new platforms, platform buildings, and a new subway for passengers and baggage were built. Then the war broke out, causing further work to be stopped. The completion of the scheme is high on the priority list.



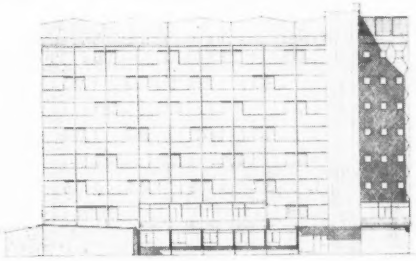
The project for Plymouth North Road Station also includes district administration offices. Above and below photographs of the model; bottom of the page, the ground floor plan. Envisaged before the war, this project has been replanned to accord with the post war replanning of Plymouth



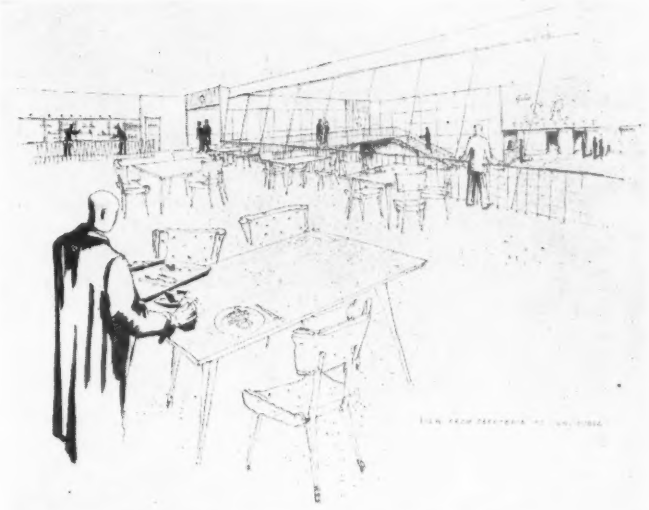




Elevation of the main entrance façade parallel with the platforms



Elevation of the office block

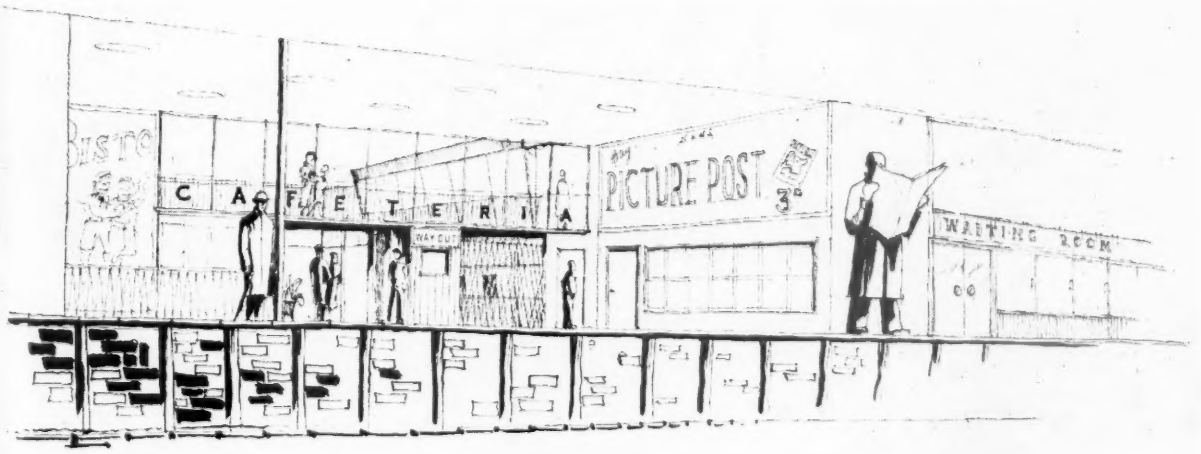


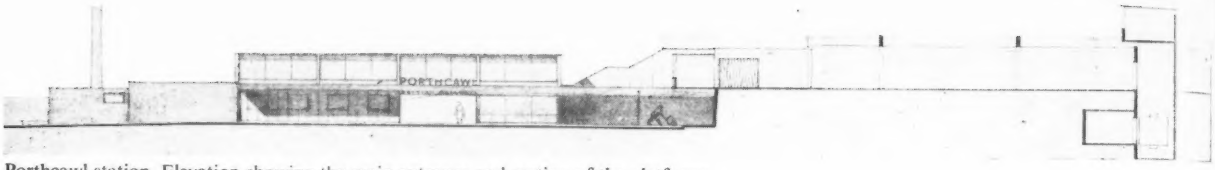
Above: perspective view from the inside of the cafeteria looking down into the concourse. Below: perspective view from the platforms towards the entrance from the concourse

Plymouth suffered heavily from bombing during the war, and in consequence a re-planning scheme was presented to the City Council, prepared by Mr. J. Paton Watson, the City Engineer and Surveyor, with Sir Patrick Abercrombie [*F*] as consultant. One feature of the plan is a boulevard—the Armada Way—stretching in a straight line from the Hoe to a point near the North Road station, thus providing a direct traffic route from the station, through the shopping and civic centres, to the Hoe. The rebuilt North Road station will therefore take its place in the re-planning scheme.

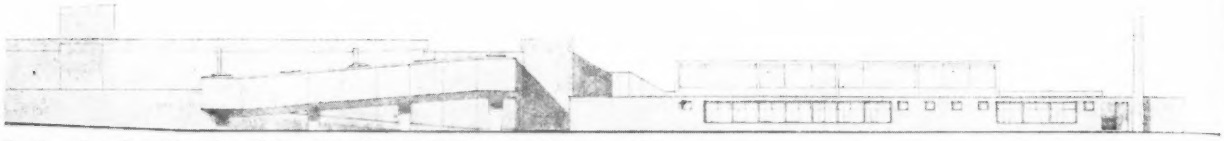
The detailed planning of the station was largely prescribed by the existence of the work carried out before the war, but in completing the design several requirements had to be borne in mind : there must be two main circulations, one for passengers and the other for parcels, and these had to come together in the existing subway without cross-circulation; there must be a restaurant service available to passengers and non-passengers; and there must be spacious office accommodation, above the booking-hall level, for the staff administering the complex operating, commercial and engineering services dealing with the whole of Cornwall and a part of Devon.

Those were the principal functions, but in a station so important as Plymouth there were other requirements to be satisfied, such as a re-stocking point for dining-cars; mess rooms for the railway staff; and dormitory accommodation for the train crews, who normally change at Plymouth on long-distance trains. In addition, Plymouth is much used by the Services, and

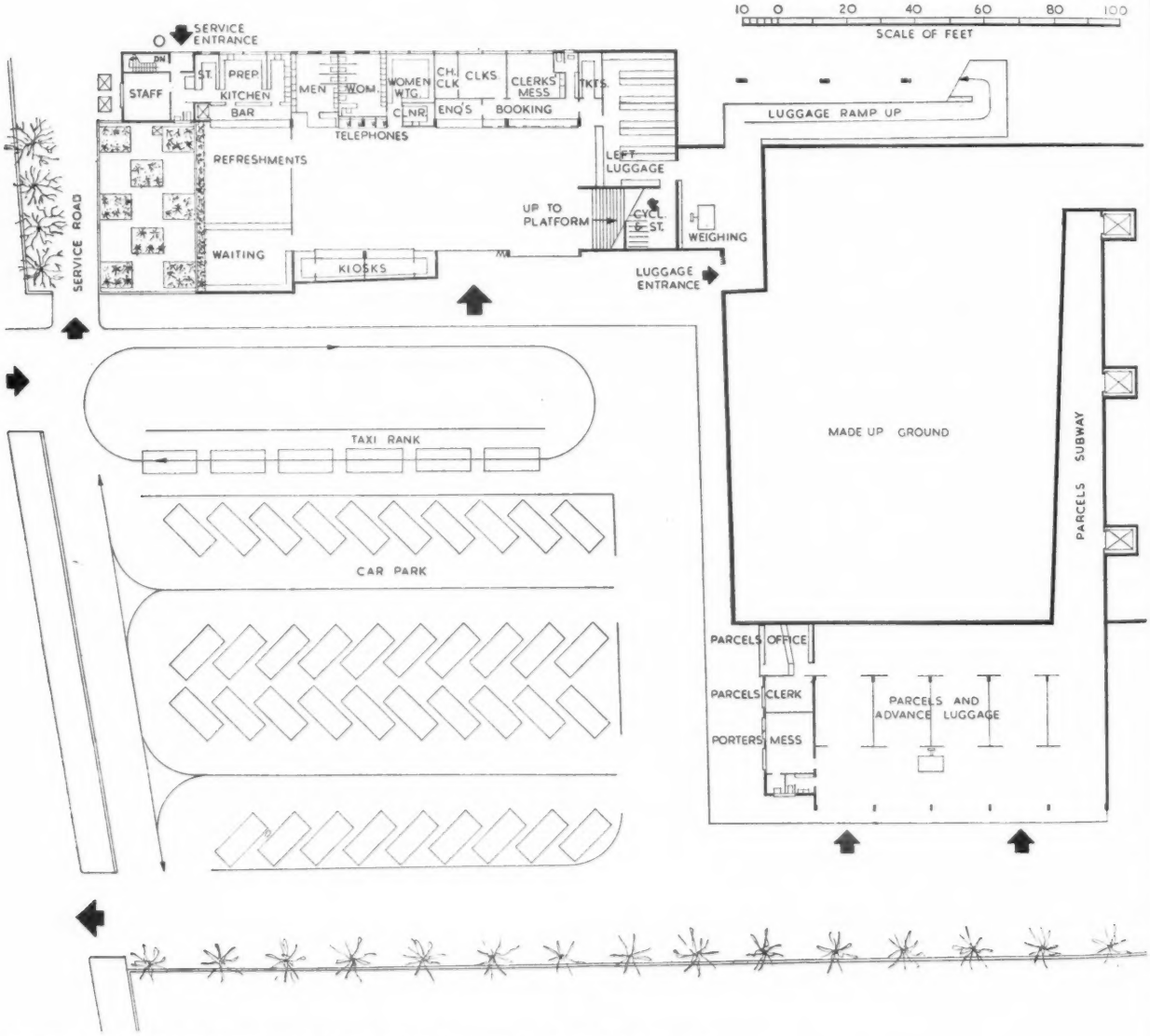




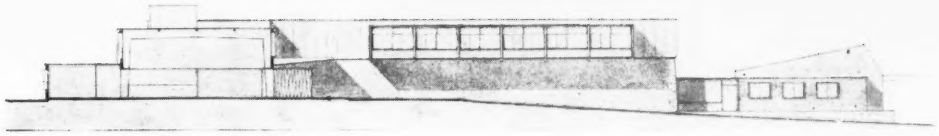
Porthcawl station. Elevation showing the main entrance and section of the platforms



Porthcawl station. Elevation of the back of the station showing the covered luggage ramp



Porthcawl station. The main entrance level. The station is planned for large holiday crowds



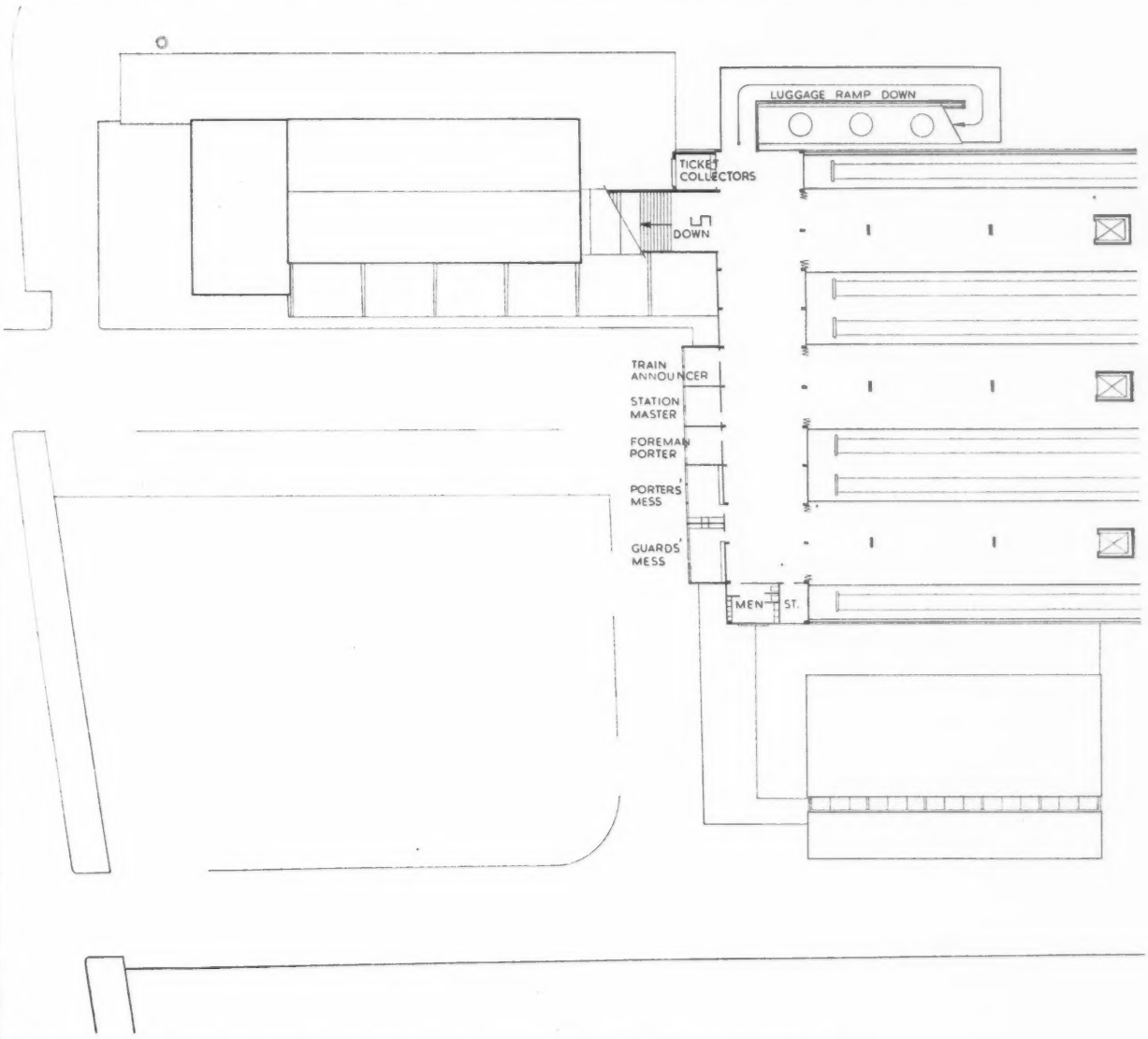
Porthcawl station. Section through the concourse

therefore offices had to be provided for the Railway Transport Officer and his staff.

Although the new North Road station has high priority, the claims of the Millbay Docks have not been overlooked, and there is a project to build a terminus for the boat trains arriving from all parts of the country. Plymouth has long been a port of call for ocean liners sailing to many parts of the world, and as foreign ports recover from the devastation of war, revival of this traffic is expected.

Porthcawl. Assistant Architect: Pamela Francis *[A]*

The conditions at Porthcawl are very different from those at Plymouth, for normally the Porthcawl passenger traffic is comparatively small in volume; but in the summer there is a great influx of excursion and other trains. It is therefore proposed to build a new station on a new site, and this decision was dictated to a large extent by the projected town planning scheme, because at present there is a level crossing which it was obviously desirable to remove. For engineering and train-marshalling reasons the track had to be raised to ease the gradient, and a staircase will give access from the booking-hall up to the platforms. To ease the excursion rush a ramp will enable passengers to leave and enter the station without converging on the staircase. As the advanced luggage and parcels traffic is considerable, subways and ramps enable this to be handled free from passenger paths.



Porthcawl station. The platform level. The luggage ramp is planned for use by passengers in excursion rushes

Lighting of Buildings

By W. A. Allen, B.Arch. [*A*], and R. G. Hopkinson, Ph.D., M.I.E.E., F.I.E.S.

Read at a joint meeting arranged between the Illuminating Engineering Society and the R.I.B.A. Architectural Science Board, 13 March 1951

L. P. Rees [*A*], Chairman of the Architectural Science Board, in the Chair

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Part I.

Introduction

This is a discussion on design for good illumination. The term design means different things to different professions, and we must first give some attention to what we mean by good design and how our meaning is to be interpreted by architects and by lighting engineers.

Architects, in common with all artists, will hold that design is essentially an intuitive act in which the imagination is used to handle the variables until a promising balance is struck, suitable for development. Any computation which is required would take place at some secondary stage rather than at the conception of the design. The use of the imagination is regarded as essential for flexibility and for the infusion of aesthetic character, and computation at the primary stage would interfere with its functioning. Both the architectural and engineering professions at their highest manifestations are creative, and act on inspiration disciplined by technique. But among engineers the influence of this technical discipline is more prominent in the inception of the design than among architects.

Lighting practice has a strong technology which is based almost solely on the computation of the illumination on the working plane or on the general visual task. The lighting engineering profession has confined itself in the lighting of buildings largely to the provision of artificial lighting on the working plane, while architects have concentrated on the provision of natural lighting, and there is little overlap between the two professions. As a result, natural lighting has been taken to be the architect's special province and he has tended to leave the provision of artificial lighting to the engineer. There is no advantage in such a division of interests, and we are devoting ourselves at the Building Research Station to the co-ordination both of the outlook and the practice of the engineer and the architect in all fields of the lighting of buildings.

In order to explain this approach it is necessary to go back briefly over the development of lighting practice up to the publication of Post-War Building Study No. 12, 'The Lighting of Buildings'. This was an attempt to sum up what was necessary for the architect to know of lighting practice as it was understood at the time, but was not limited to a summary. An attempt was made to look forward to new problems which were then arising.

In the training of the lighting practitioner, computation had usually been the starting point of the design process. A certain level of illumination is taken as an objective, the characteristics of output and distribution of the light sources (whether artificial or natural) are taken as known, the amounts of reflected light to be expected from walls, floor and ceiling are either neglected or are found by calculation or from tables; and an equation is written out which effectively relates sources to requirements. An allowance is made for reduction of light due to dirtying of windows, or the diminution of output of artificial sources, so that the system will run consistently above the desired minimum level of illumination. Choice of light fittings or of windows is constrained to ensure limiting discomfort effects, and all these factors of design are reduced to arithmetic as far as possible. This approach is essentially computational and judgments are based on factors whose importance and weight have been measured and established. When the trainee passes out into the world of practice he is disciplined into a way of thinking which tends to avoid relying on imagination, and he comes to consider lighting as a geometrical or arithmetical puzzle which can be solved by calculation alone. This persists for the time which elapses between his training and his graduation as a fully competent lighting practitioner. It is at this stage that he realizes that the computational approach to lighting can get him only a small part of the way.

The next stage in his development has been well expounded by J. M. Waldram in his presidential address to the Illuminating Engineering Society entitled 'Beyond Engineering'. Waldram criticized orthodox lighting practice as not giving sufficient weight to factors which, although at present somewhat intangible, are easily recognized broadly as having much to do with beauty and effect. Clearly he was right, for there can be no justification for giving greater weight to one factor than to another merely because one has been reduced to simple arithmetic while the other has not. The 'unknowns' may prove eventually to be more important than the 'knowns', and there is evidence that illumination will give us the case in point before long.

Good illumination in fact can only be described as 'good' when it gives suitable conditions for visual requirements, when it gives a high order of comfort, when it stimulates people to the feelings appropriate for what they are doing, and when its character is that of the building it lights and the illumination confirms the character of the building. It may be that we will never have a detailed technological basis for predicting the effects which determine the character of a building, yet these are likely to be as important as any of the other criteria. Personal judgment must be a primary force in good design and computation can never be a substitute for the artistry of a good designer. It is necessary for everyone at all times to recognize the right place for computation as an aid or a servant, and not the master of a designer.

Good lighting, then, concerns not the working plane only or mainly, but the whole environment, and our problem is to develop balanced views about the lighting treatment. Many of us have been impressed by the flow of literature from the United States of America about 'brightness engineering' as they understand the term in that country, and it has this to its credit that it is a study of the whole environment. Careful examination of it shows much need for modification, however, in particular the implicit limitations of brightness lead to rather flat, featureless, abstemious kinds of illumination, in which the development of character is handicapped.

The problem therefore is, as usual, to take what seems good out of what exists and keep it, and to add other ideas, when possible, in the effort to get our knowledge in the same balance as our impressions and feelings, so that each helps to raise the other to increasingly higher states of sensitivity.

Lighting and Vision—the Limitations of Computational Approach

Glare. Foremost amongst the factors which are not yet readily computed are the phenomena which are linked together under the general term 'glare'. They are subjective; that is to say, they are resident in the observer himself and can be detected only subjectively. They can be assessed, but they can not be measured.

It is not easy to define glare precisely; it is often more useful to analyze its effects on vision, which can be separated into two fairly distinct manifestations. First, there is the effect which glare has on the ability to see, for the presence of bright light sources in the field of view will affect the ability to see objects in other parts of the field. For example, it is often difficult to see details immediately above a window because of the glare from the bright sky just below. This direct disabling effect is due to the inability of the eye to adapt to widely differing conditions in the field of view, and it tends to adapt to the brighter parts of the field to the detriment of vision in areas which are in shadow. The disabling effects can be traced directly to the total amount of light which reaches the eye from the

glare source, and are not dependent on its brightness alone.

The sensation of discomfort associated with bright light sources in the field of view is something which is believed to be largely distinct from the disabling effect, for either may be present without the other. This is not generally realized, perhaps because severe conditions of disability glare are almost always accompanied by sensations of discomfort or even pain; certainly the impression has arisen that disability and discomfort effects are merely different degrees of the same thing. It can be demonstrated by a simple experiment that certain situations quite common in practice can give rise to severe discomfort without any noticeable disability. It is less common, but nevertheless of definite practical importance, that other conditions can give rise to no noticeable discomfort and yet a marked deterioration of vision can result.

Discomfort without disability arises in very bright surroundings when light sources of intense brightness are visible. Such instances are by no means uncommon, unfortunately, in current lighting practice. Drawing-offices lighted to high levels of illumination with rows of fluorescent lamps freely exposed give rise to noticeable discomfort without any appreciable direct disability, while disability without discomfort arises when the levels of illuminations are low and the lighting is provided from very large sources of low brightness, as for example, with a large window. On a day with dull overcast sky this will constitute a disability glare source. The eye will adapt to the brightness of the sky as seen through the window and, as a result, will be unable to distinguish details of objects in the darker parts of the room. Screening the eyes from the window will assist adaptation and it will then be possible to distinguish the objects in the darker parts of the room quite readily.

It has been established by experiment that the sensation of discomfort which arises from the glaring light source is due partly to the total amount of light which reaches the eye from it and partly to its brightness. The disabling effects of the glare source on the other hand are not dependent on the source brightness, but are determined by the illumination produced at the eye, i.e., by the size and brightness (the intensity) and the distance of the source. It is not correct to state, as has sometimes been done, that the discomfort effect of a glare source is due entirely to the source brightness. The sensation of discomfort is dependent not only on the source brightness but also on the *apparent area* of the source. A fluorescent lamp whose brightness is sufficiently low to render it free from any responsibility for a sensation of discomfort when mounted on a street lighting unit 60 ft. from the observer's eye will nevertheless be extremely uncomfortable if mounted above his desk so that he can see it 4 ft. away from him. The brightness of the lamp is exactly the same in both cases but the apparent area, and hence the illumination which it produces on his eye, is very different indeed. It is astonishing that this fact, of major importance, is still unrecognized in many modern lighting codes of practice, where all the emphasis is placed on the dependence of the discomfort effects on the brightness, and not the apparent area, of the glare source. The omission is the more remarkable in that as long ago as 1921 the apparent area of the source in determining 'glare' was recognized in certain factory lighting regulations, although it is almost certain that the disability, and not the discomfort due to glare, was the criterion governing the framing of the relevant clause.

The difficulty in identifying the characteristics which determine glare, both in natural and artificial lighting, has had serious consequences. In the field of natural lighting we can regret our failures to maintain and surpass the standards of lighting design exemplified in the best of the Gothic and Georgian traditions. In the field of artificial lighting the chief error seems to have been the lack of control over the source brightness in the directions in which it will be visible to the eye, and the failure to appreciate the dependence of the sensation of discomfort on the total illumination reaching the eye from the glare source. It has not always been appreciated that a lighting unit which gives a higher output of light must necessarily have a lower surface brightness if the discomfort is to be avoided. These difficulties have arisen due to economic considerations, and of course they are not traps into which competent lighting consultants have fallen; nevertheless it must be accepted that they do exist in sufficient amount to cause a major problem at present, and the work of the Building Research Station has been directed towards finding some reasonably simple and economic solutions to them.

The factors which determine glare discomfort have been studied in some detail. They can be summarized in the formula, which applies over a limited range of conditions :

$$G = \frac{B_s}{B_b^{1.0}} \frac{1{\cdot}6 \quad W^{0.8}}{} \times K$$

where B_s, W, and B_b are the brightness of the source, the apparent area of the source, and the brightness of the general background of the field of view respectively. G is the glare constant, which has values for different degrees of glare discomfort. K is a factor which depends on the separation of the direction of the glare source from the direction of viewing.

Thus the sensation of discomfort is influenced by both the brightness and the apparent area of the source. The formula can be rewritten

$$G = K \times \frac{B_s^{0.8} \left[\frac{I}{d^2}\right]^{0.8}}{B_b^{1.0}}$$

where I is the candlepower of the source, and d the distance from the source to the eye, $\left[\frac{I}{d^2}\right]$ being the illumination produced by the source at the eye, indicating that the intensity (candlepower) and the brightness of the source have equal weight in determining the degree of discomfort. The effect of the displacement of the source is not easy to assess. The factor K is a hyperbolic function, asymptotic to an angle of displacement of approximately 90° above the viewing direction (the source being invisible beyond that point). Its effect can be appraised from the following table, which shows that a glare source which is uncomfortably glaring when viewed directly is acceptable when removed beyond 50° from the direction of viewing. This applies only if the eye fixates firmly in one direction, which of course rarely applies in practice.

TABLE I

The effect of the angle of displacement on the degree of discomfort caused by a glare source

Angle of displacement	Assessment of degree of glare
0°	Uncomfortable.
15°	Just uncomfortable.
30°	Distracting, but not uncomfortable.
50°	Just acceptable.
Beyond 50° ..	Acceptable.

The final factor in the formula, B_b, the background brightness, is of major importance. Its presence in the formula indicates that glare discomfort is not a function of the source alone, but of the surroundings also. The sensation of discomfort is thus a function of the contrast between the source and its surroundings. A glare source, in dark surroundings, can be a major source of discomfort. The same source, in bright surroundings, may cause no discomfort at all.

TABLE II

The effect of background brightness on the degree of discomfort caused by a glare source

Brightness of background	Assessment of degree of glare
1.0 foot lamberts	Intolerable.
3.0 ,, ,,	Uncomfortable.
10.0 ,, ,,	Distracting, but not uncomfortable.
50.0 ,, ,,	Acceptable.
150.0 ,, ,,	Imperceptible glare.

Under some conditions met with in practice, the relationship between the factors becomes more complex and the formula breaks down. This is especially true at high levels of brightness with large glare sources. The eyes can not adapt without acute discomfort to large areas of brightness above about 5,000 foot lamberts, so that no increase in the brightness of the surroundings serves any useful purpose. Full sun on snow or white walls produces a brightness of this order, and, as is well known, it causes discomfort to most people and even permanent injury to some. A further factor is the additive nature of glare. It has been established that the discomfort effect of a number of small sources is equal to that of a large source of the same effective area and candlepower.

The formula for the discomfort effect of

glare is incomplete in many ways. The most important is that it fails to show the effect of the immediate surroundings to the glare source. Recent studies have shown that these influence the degree of discomfort which a source may cause. The studies are not yet complete, but show that, to be effective, the immediate surround must have an area approximately ten times (three times linear dimensions) that of the glare source, and should have a brightness intermediate between that of the source and that of the general surroundings. This 'contrast grading' effect is precisely that used by the designers of windows with deep splayed reveals, the brightness of the reveals being intermediate between that of the window itself and the surrounding window wall.

The Working Plane. The lighting of the working plane itself has been given most of the attention of investigators, and the basic studies, such as the early work of Koenig and the more recent work of Lythgoe, Weston and Luckiesh are well known. For the moment, therefore, the discussion will be confined to visual effects which are equally as important to good lighting, but which have received comparatively little attention.

Phototropism. The visual mechanism has been and is being studied in considerable detail, but as the experimental findings mount up, our conception of the mechanism is not clarified—rather the reverse. Fortunately certain well-defined characteristics can be understood in the light of existing knowledge with sufficient clarity to determine the factors that govern good lighting. One of the most important which the lighting designer has to consider is the desire to direct the eyes towards light. We can call this, on the botanical analogy, 'phototropism', meaning the arrangement or orientation of the human observer towards the light. Phototropism is a reflex action. It follows that any lighting installation which is planned, like American 'Brightness Engineering', to render all parts of the field of view of uniform brightness will fail to make use of the phototropic mechanism. If it is desired to maintain attention on a particular area in the field of view—for example, the work—it follows that the visual process itself will assist in maintaining attention if the work is the brightest part of the field of view.

Visual Acuity. There are other reasons why the brightest part of the field of view should be the working area. Investigations such as those of Koenig and Lythgoe have shown that visual perception of fine detail is at its best when the visual task is a little brighter than the surroundings. But then something of a conflict appears; the maximum phototropic effect arises when the visual task is very bright and the surroundings are very dark, while the maximum visual acuity arises when the surroundings are only a little less bright than the task.

Visual Comfort. Another factor is ease of seeing and the sensation of comfort. The conditions for maximum phototropic effect are not comfortable. The eyes desire a rest, but are under continual constraint to turn themselves back to the task. On the other hand, the conditions for maximum acuity are again not comfortable. The eyes have no 'resting place' in the uniform field of view. The ideal situation from the standpoint of comfort is a compromise, in which the visual task is the brightest object in the field of view, and the surroundings are well lighted but to a somewhat lower level. The precise ratio of the brightness of task to that of its surroundings depends on the relative importance of visual comfort, visual acuity, and constant attention to the work.

In practice the brightest objects in the field of view have often of necessity to be the sources of light—the windows or the lighting units. The eyes will naturally gravitate towards them unless they are well removed from the direction of the visual task, but it must be accepted that this is not always possible, and indeed not always desirable. The provision of a 'view window' as a visual resting place is good technique, provided full use is made of acceptable methods such as 'contrast grading' for reducing any sensation of glare discomfort which might otherwise result.

The Task and Its Surroundings

In determining the optimum brightness of the objects of attention, the designer can call on a sufficient body of experimentation to supply the essential needs. The experimentation is based partly on direct experience and partly on an analysis of the factors which go to make up the visual task. These have been reduced to two by Beuttell and Weston; the apparent size of the critical detail of the task, and the contrast between the detail and its background. It is thus possible to draw up a simple table relating these factors to the amount of light (illumination) necessary for the work.

A task involving fine detail on backgrounds of high reflection factor demands a very high illumination level which results in a very high brightness to the visual task. It will follow from what has been said earlier that for optimum visual acuity the surroundings to the task should also be bright. Similarly, a very high illumination on a task of high reflection factor may actually constitute a glare source if the background (i.e. the general surroundings) are not bright. On the other hand, the concentrating effect of the bright task in dark surroundings—phototropism—has been noted. The table illustrates these points.

The phototropic effect and the requirements of visual comfort are thus in opposition to some extent. However, in the same way that contrast grading can alleviate discomfort from a glare source, contrast grading can assist the compromise inherent in the relation between the brightness of the visual task and its background.

The experiments on which this suggestion is based are complete as far as they go, but for rigid statistical confirmation much more remains to be done. The evidence so far obtained indicates that if the immediate surroundings to the visual task (e.g. the writing-table, or the surround to the television screen) are sufficiently large in relation to the size of the task itself, and are of a brightness intermediate between that of the task and that of the general surroundings, a better compromise between visual acuity, visual comfort and the phototropic effect can be produced.

Simultaneous Contrast. Here we must consider the influence of the brightness of the surroundings and of the task on one another. The eye tends to adapt to the average brightness of the field of view, and in doing so determines its sensitivity to any particular brightness in the field of view. The practical effect of this is that contrasts of juxtaposed areas are enhanced. If the surroundings to the visual task are brighter than the task the eye, tending to adapt to the brightness of the surroundings, will see the task as a much darker area than a physical measurement of the task brightness would suggest. Conversely, if the surroundings are darker than the task, this will appear, by virtue of the enhanced contrast, brighter than a physical measurement of the task brightness would suggest. The influence of the surrounding brightness on the task brightness is of major importance, and detailed studies have been made which permit the effect to be appraised quantitatively.

Brilliance, Stimulation and Gloom. Finally, we must consider the appraisal of the brightness of the whole field of view. If this is of uniform brightness there is great difficulty in assessing how bright it is. The eye needs contrasts in order to assess absolute values of brightness. In judging whether the scene is bright, dull, or gloomy, the eye makes certain comparisons which are not yet clearly understood. Bright pin points of light undoubtedly give an impression of high general brightness of the whole scene, as display lighting specialists well know. Direct experiments at the Building Research Station have shown that

TABLE III

Effect of background to visual task on acuity, comfort and attention

	Background	Visual acuity	Visual comfort	Phototropic effect
Task bright	Dark	Fair	Poor	Optimum
	Medium	Approaching optimum	Optimum	Reduced
	Bright	Optimum	Reduced	Absent
	Brighter than task	Not good	Poor	Absent

a room lighted to a certain level of brightness with low contrasts is judged duller (i.e. less bright) than a room lighted to the same level of brightness but with small brilliant sources of light in the field of view. Such sources need not cause discomfort if they are restricted in candlepower, and if they are provided with contrast-grading surrounds. The proper provision of 'sparkle' in a room can make a real contribution to the impression that it is well lighted.

In general, where, as in work places, brilliance is not an essential feature of lighting, drabness should nevertheless be avoided. It is often a great advantage to have 'sparkle' on the centre of interest, for example on machines. The need for sparkle does not depend on the result of formal experimentation because there is a great deal of circumstantial evidence for it, and there is a persistent tradition throughout history. Totally indirect lighting of flat surfaces tends to be soporific. Interest is aroused by variety in the brightness pattern. For this reason there is also an advantage in a view of the lighting fittings and of the windows and again for these to be of non-uniform brightness. Glare discomfort can be avoided by the use of contrast grading in the design.

Some Principles—A Summary

The purpose of the paper has not been to present a finalized technology, but rather to indicate some of the foundations on which a technology could be based. It will be realized that much more could have been said, especially of 'texture' and 'contained shadow', and of the considerations that govern the perception of movement. But out of the various matters that have been discussed some clear conclusions emerge: (1) *The object of attention should be the brightest part of the field of view.* The brighter it is, the better will detail in it be seen ; the brighter it is relative to its background, the easier will it be to concentrate on it. (2) *The local surround to the object of attention, and the general background, should be of progressively lower brightness.* The more harsh the gradation, the less the visual comfort, but the greater the phototropic effect. When the utmost concentration of the work is demanded, at the sacrifice of visual comfort, the steeper should be the contrast between work and background. When prolonged and monotonous tasks are involved, greater visual comfort may be indicated, and a gentle contrast gradation between the work and its background should then be provided. (3) *The sources of light should be limited in brightness and area, and should be graded into their surroundings.* The limitation in brightness of the sources must be determined in relation to the brightness of the surroundings by means of the formula previously given, the desired degree of visual comfort being taken into account. In practice this often produces a limit for the avoidance of direct discomfort of approximately two candles per sq. in. for lighting fittings of about one sq. ft. in area mounted conventionally from a 10 ft. ceiling.

Bare fluorescent lamps are well above the acceptable limit on this basis. Similarly, a large window wall backed by a bright sky is beyond the comfort limit. It is the combination of the source brightness and its apparent area that determines the degree of discomfort. A large window must be less bright—the sky brightness must be diminished by some means, e.g. a net curtain. A very small source can be bright, and so add sparkle without introducing discomfort.

These, at present, seem to us to be the chief technical ingredients of good lighting, and the problem in practice is their right mixture for the particular purpose of any building. But let it be especially understood that in our view *all* ingredients should generally be present in some degree in every solution. The balance will be different in a home, a hospital, or a factory; but if the principles mentioned really comprise good lighting, then good lighting is not possible without them. Perhaps this will be considered an extreme view when it is appreciated that it would rule out, for example, totally indirect lighting; but there is no doubt in our minds on the point.

At the same time there is no guarantee that the group of principles is complete, and there is, in fact, at least one gap evident, for no mention is made of the affective or emotional states except stimulation, and since these are certainly controlled to a large extent by visual phenomena, they must some day be included. Feelings of gloom and of buoyancy or freshness are beginning to be understood in a way which enables them to be consciously considered in design, but ideas are not far enough advanced to be set out here.

(*To be continued*)

International Union of Architects

Second Congress: Morocco, 1951

Congress. The 2nd Congress of the International Union of Architects will take place from 23 to 30 September 1951, at Rabat, Morocco. M. Alexandre Courtois, *Président du Conseil Supérieur de l'Ordre des Architectes du Maroc*, will preside. The theme of the Congress will be 'How the architect is tackling his new tasks'.

The Congress will be divided into two parts: (*A*) The theory and practice of town planning; (*B*) Review of future prospects for reconstruction and redevelopment.

Sessional Papers. There will be five sessions at which papers will be studied:

A.1. Urban Centres.
A.2. Housing. (Covering all aspects from lay-out in the city to domestic equipment of an individual house.)
A.3. Open Spaces. (Covering all problems from the provision of green belts, etc. to the lay-out of parks, gardens and sports grounds.)
A.4. Building Techniques.
B. Outlook for the future.

Contributions. Contributions under each of the above headings will be made by individuals and by each member-nation.

A co-ordinator has been appointed for each session, and his task is to present at the meeting a digest of all the contributions received on his particular subject. Mr. Anthony M. Chitty [*F*] has been appointed as co-ordinator for the session A.2. Housing, and will be responsible for co-ordinating the contributions on this subject. It is open to any individual member to contribute material on any of the subjects. In no case should the contributions exceed 1,000 words. Contributions should be addressed to the Secretary, United Kingdom Committee, I.U.A., c/o R.I.B.A., 66 Portland Place, W.1, and must reach him not later than 1 June 1951. They must be typed in duplicate. Arrangements will then be made for them to be forwarded to the appropriate co-ordinator.

In addition to submitting contributions as described above, architects proposing to attend the Congress may contribute to the discussion at any meeting, but are required to give prior notice of their intention to do so, providing at the same time a précis of their intended remarks. Such notice and précis should be sent to the Secretary, United Kingdom Committee, for forwarding.

Assembly. The Congress will be preceded by an Assembly at Casablanca from 20 to 23 September.

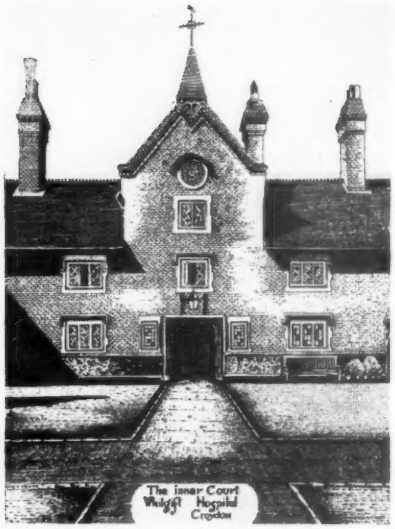
Exhibition. An international architectural exhibition is being arranged simultaneously with the Congress, and the British section is contributing an exhibition of some 45 panels entitled 'In Britain Today'.

Tours. Seven tours of places of interest in French North Africa are being arranged by the International Union in conjunction with the Congress. The longest tour ends on 11 October, and the shortest on 4 October. Particulars of these tours may be obtained from the Organising Secretary, International Union of Architects Congress, 2 Rue Goethe, Paris XVI.

Travel Arrangements. Messrs. Thomas Cook and Son have been appointed travel agents by the International Union, and conversations have been held with their London office with a view to Messrs. Cook's accepting individual applications for inclusion in a party for which special travel arrangements will be made. Those proposing to attend the Congress should send their names and addresses to the Secretary, United Kingdom Committee, I.U.A., c/o R.I.B.A., 66 Portland Place, W.1, and arrangements will be made for Messrs. Cook to get into touch with them. Applications may also be made direct to Messrs. Cook's head office, Berkeley Street, London, W.1. These applications should quote the reference number *POD/N*.

Housing Needs of the Old

Exhibition at the R.I.B.A.

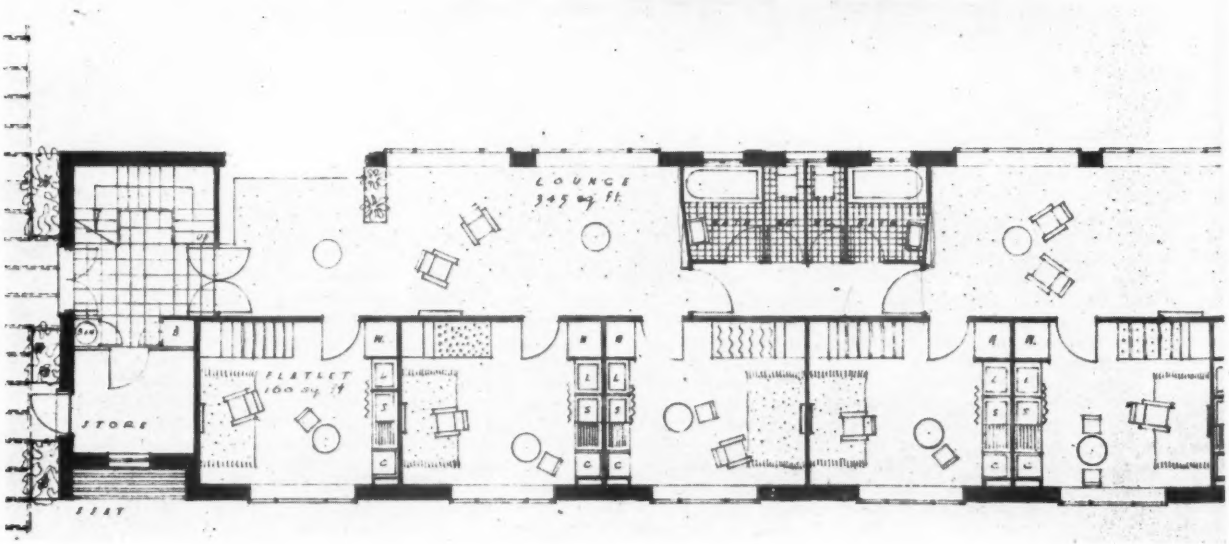


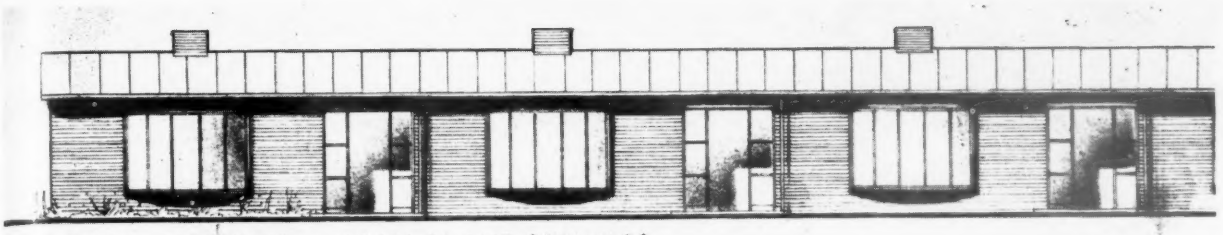
The Whitgift Hospital, Croydon. From the historical section

AN EXHIBITION of designs for housing old people opened at the R.I.B.A. on 13 April 1951. Because of other bookings of the R.I.B.A. halls the exhibition will not be on view at the R.I.B.A. after Saturday, 28 April (5 p.m.). However, it has been designed for touring and will be immediately available to Allied Societies. Examples of various kinds of housing provision for aged persons are shown, including flatlets and hostels. Both new buildings and conversions are on view. The accompanying illustrations show some of the schemes that have been prepared for this very deserving object.

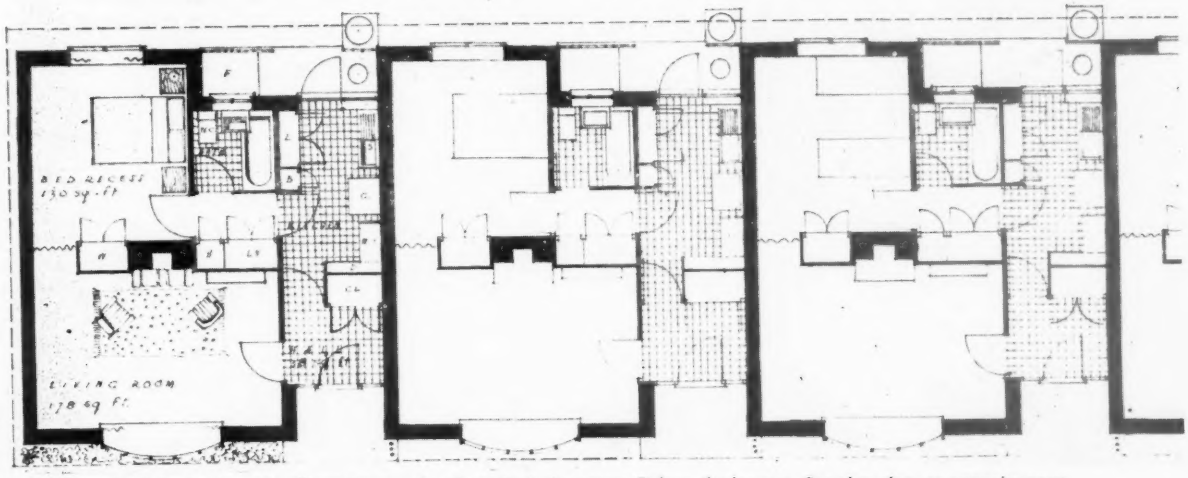
Memorial Homes at Aylesby. Architect, C. H. James, R.A. [*F*]

Below: Flatlets, with communal bathroom and lounge, Spon End, Coventry. D. E. E. Gibson, C.B.E. [*A*], City Architect

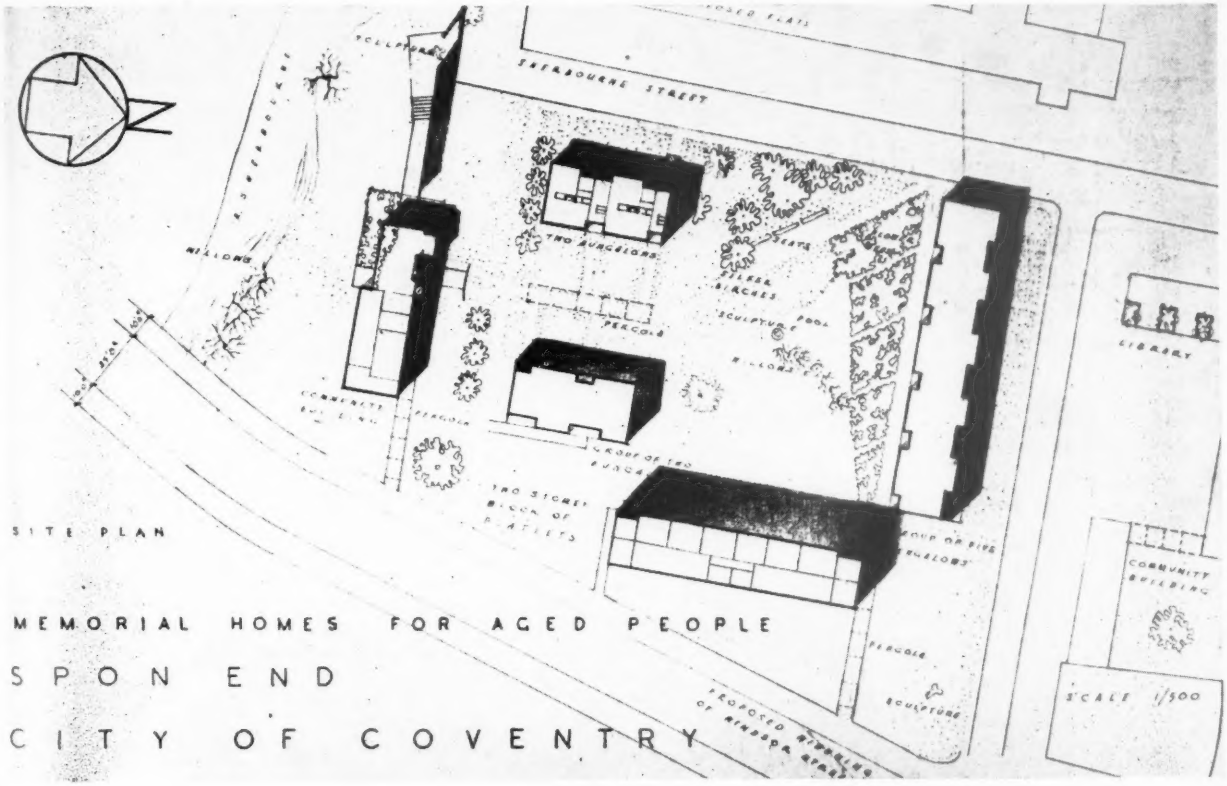




SOUTH ELEVATION · GROUP OF FIVE DWELLINGS



Above: Self-contained single-storey dwellings for couples, Spon End, Coventry. Below, the lay-out. See also plan on opposite page

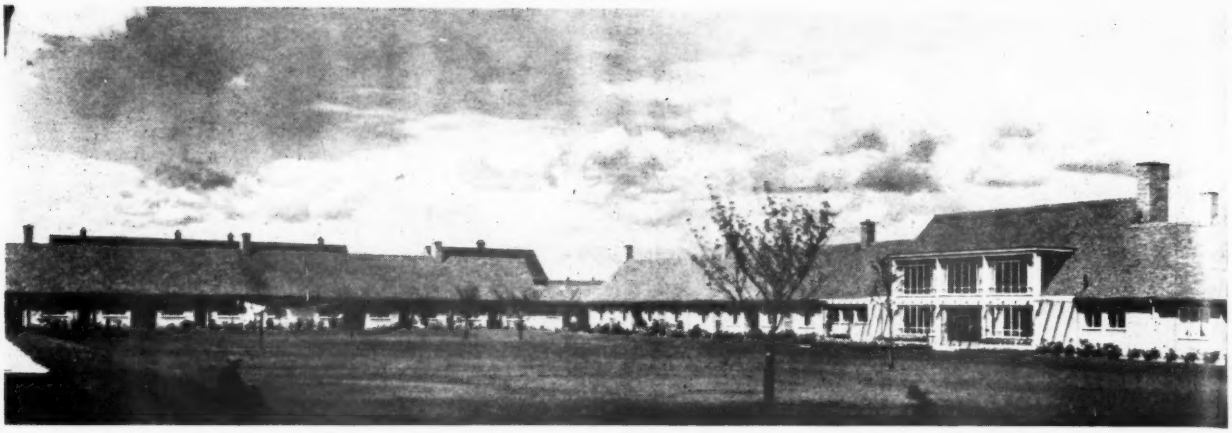


SITE PLAN

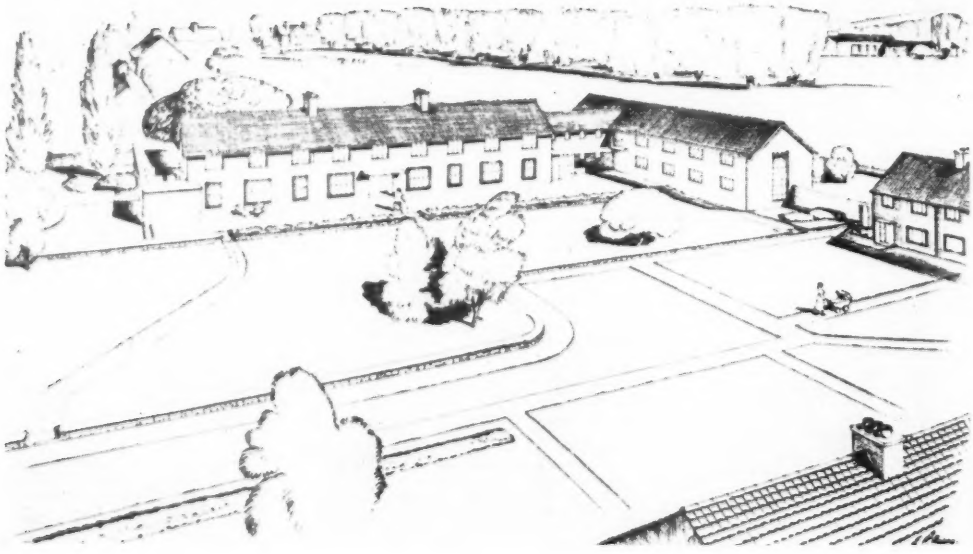
MEMORIAL HOMES FOR AGED PEOPLE

SPON END

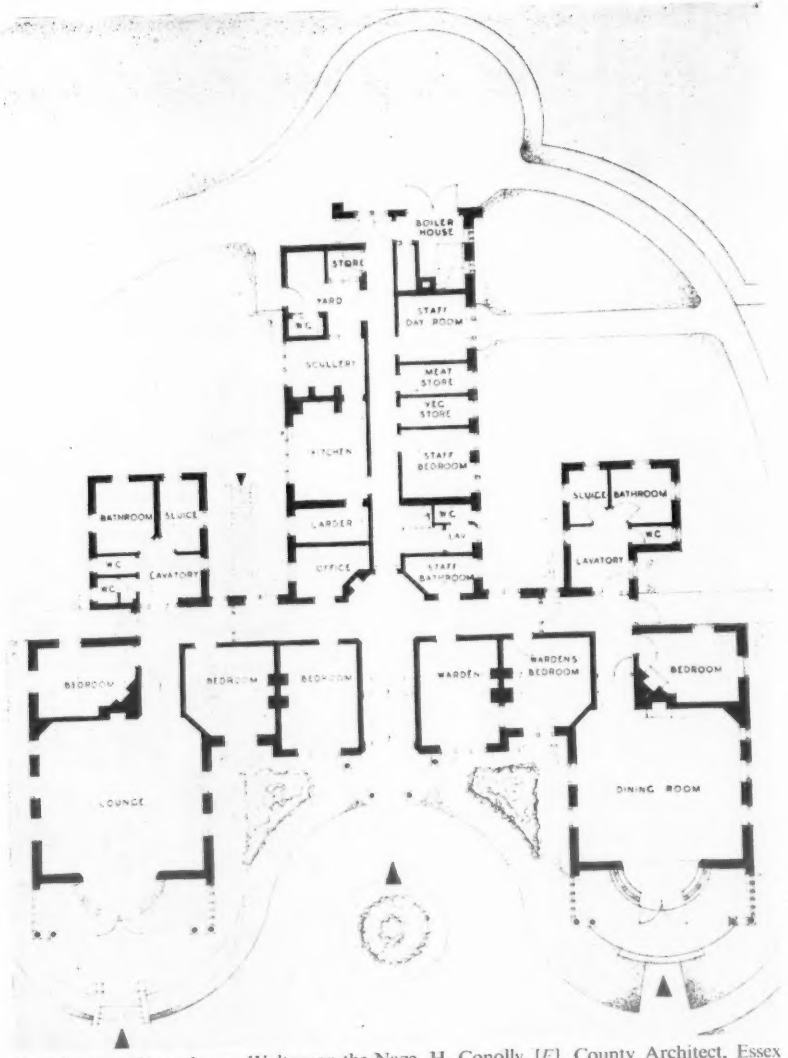
CITY OF COVENTRY



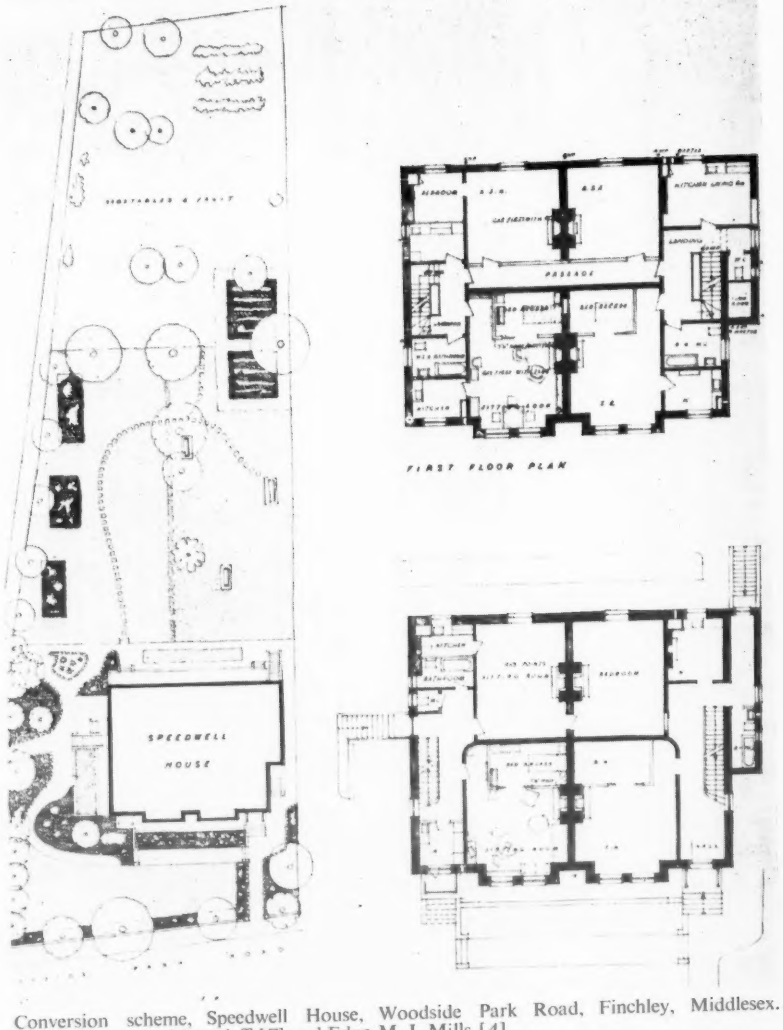
Top: Commonwealth Houses, Kingston-upon-Hull. 26 single-storey dwellings grouped round a quadrangle, with communal hall in centre of one side. Above, left: An entrance. Above, right: interior of the communal hall. A. Rankine [*A*], City Architect



Proposed hostel, Hindley, Lancashire. G. Noel Hill [*F*], County Architect



Hostel conversion scheme, Walton-on-the-Naze. H. Conolly [*F*], County Architect, Essex County Council



Conversion scheme, Speedwell House, Woodside Park Road, Finchley, Middlesex. Architects, Harry Moncrieff [*F*] and Edna M. I. Mills [*A*]

Dimensional Co-ordination

Reports of the R.I.B.A. Architectural Science Board Study Group No. 3, 'Dimensional Standardization', and of the British Standards Institution Committee B/75, 'Modular Co-ordination'

These two reports have been prepared simultaneously. That by the R.I.B.A. Architectural Science Board Study Group No. 3 is published by direction of the Council. For comparison we publish a summary of the B.S.I. report. This can be obtained from the British Standards Institution, 24/28 Victoria Street, London, S.W.1. It is numbered B.S. 1708; 1951, price 2s. 6d. net, post free. The committee invite observations and comments on the opinions expressed; they should be addressed to the Director, British Standards Institution.

DIMENSIONAL STANDARDIZATION

Summary and Recommendations

The search for some system of dimensional co-ordination in building is of fairly recent origin, and has arisen from the progressive introduction of elements produced in the factory. Some standardization in the size of these elements is inevitable from the point of view of production, and dimensional co-ordination is an attempt to find some systematic relation between the standard sizes in order to make sure they can be assembled on the site to produce efficient and economic buildings.

Dimensional co-ordination has additional objectives such as simplifying the preparation of drawings and quantities, assisting setting out on the site, etc. These objectives have been well stated in Project A-62, the main American work on the subject. It has also been claimed that the existence of such a system would encourage manufacturers in the development of new products, by providing them with dimensions certain to fit into the accepted pattern of building.

In this country the problem must be seen against the background of the very rapid development in standardization of all types of building products by the B.S.I. British Standards now cover practically the whole field of building and their use is steadily increasing. Government departments and local authorities both show a tendency to make the use of British Standards a requirement in their work, and in other fields the price advantage enjoyed by the standard component over the special is often sufficient to ensure its use. Unfortunately the dimensional standards established for each industry bear little or no relation to one another. The discrepancies are overcome in practice in a number of ways; by cutting such elements as can be cut, by the use of non-dimensional materials such as plaster, or by the fabrication of specials. The loss in time and materials to which the lack of co-ordination gives rise is difficult to assess, but is undoubtedly considerable. Further, with the increasing use of standard components and the tendency towards dry construction, this loss will become proportionately greater in the future. In particular, the fitting together of discrepant elements, or the designing of specials, makes heavy demands on skilled manpower among architects and in manufacturers' and contractors' drawing offices. The range of proportion and architectural character available in the present standards is small and has severely limited their use in practice by architects.

One of the reasons why progress towards co-ordination has hitherto been slow is that no section of the building industry has any direct financial incentive in the matter. The loss arising from the present position falls ultimately, by way of the building owner, on to the community, but is not felt directly by the manufacturer or the builder. The initiative in proposing any improvement can not therefore be expected from industry, but is most likely to come from a public or private body on whom the responsibility for a large-scale building programme falls. For example, in this country the Ministry of Education, faced with the responsibility of an enormous school building programme, has seen fit to recommend the use of a dimensional module in planning in order to make possible systematic industrial production of the necessary building components. The arguments set out on this subject in the Report of the Technical Working Party on School Construction are unanswerable and could be applied with equal force to many other fields.

In other countries a considerable amount of theoretical study has already been carried out and, in several, complete systems of dimensional standardization have been proposed. The American and German examples may be taken as typical of the two types of approach which have emerged. The American system, approved by important sections of the industry, is based on a module of 4 in. Such a small module, however, is an inadequate basis for settling standard dimensions of the larger building elements such as windows, wallboards, etc.; and the very detailed study of traditional and quite flexible building materials such as bricks and tiles seems rather fruitless. These traditional materials can be economically and efficiently used without any system of dimensional co-ordination, whereas it is precisely for the larger industrially-produced elements that co-ordination is most urgently needed. The system used during the war in Germany was based on the dimension of 1.25 m. (approximately 4 ft.). This system, as applied to industrial buildings, was an undoubted success during the war and materially assisted the Germans in carrying out a large building programme economically. The actual dimension of 4 ft. is, however, open to serious criticism. Professor Gropius, in a letter to the Study Group, made the following point:

'. . . Furthermore, I have discovered that the module on which the whole system was built up in Germany was not "biologically" derived but was based on purely mathematical roots, taking about 4 ft. as the basic module. I consider this dimension unsuitable . . . as it is too large for an entrance, window, staircase, or corridor in minimum residences—and double that dimension is too long for a bathroom or for a bed.' Since the war the Germans have abandoned this module and are now developing a system based instead on a range of 'preferred sizes'.

Thus neither of the two systems just described can be regarded as completely successful. A small module such as 4 in. gives greater flexibility and enables wall thicknesses and similar details to be catered for, but fails in the prime object of such a system, to assist in the production of economic and usable components. The large module which made an undoubted contribution to a nation's building problem was based on an ill-chosen dimension which resulted in wasteful planning and crude design.

In this country the subject was first given general consideration by a war-time committee of the Ministry of Works. This committee approached the question by examining the existing dimensions in the hopes of finding a common factor by which they could be unified. This was found to be impossible and the committee made a negative report. About six months after the R.I.B.A. Study Group began its work, the B.S.I. appointed a committee to consider the same subject, under the title of Modular Planning. This B.S.I. committee has assumed from the beginning that the basic dimension from which any system of co-ordination must start should be related to the requirements of planning. It has taken the view that buildings are essentially for human use, and that many of the basic dimensions in building, such as the door opening, the staircase, the space required for a bath or bed, must derive from the dimensions of the human being. It is interesting to note that precisely the same view was expressed in a letter sent to this Group in March 1947 by Professor Gropius. The dimension which Professor Gropius arrived at after long study on these lines was 3 ft. 6 in. This he subsequently modified to 3 ft. 4 in. in order to fit in with the American Standards Institute 4 in. module. It is understood that the B.S.I. committee is studying the implications of such a dimension at the present time.

While it is undoubtedly right to make a dimension derived from the human being the basis for any attempt at co-ordination,

a single dimension such as 3 ft. 4 in. or 3 ft. 6 in. is inadequate by itself. Any system using only a single dimension, with its multiples and sub-multiples, will give rise to architectural proportions based only on the double square, etc. This would obviously be an intolerable stultification of design. Freedom of æsthetic expression is an essential requirement which must be met. It can only be met if there is a reasonably large range of dimensions to choose from, and if these dimensions are so related to each other that they give rise to a variety of geometric proportions. It seems that these needs might be met by the development of a series of preferred sizes related to the basic dimension but not simple multiples or sub-multiples of it, such sizes being in classical and Renaissance architecture. Only on some such basis could proposals for dimensional co-ordination receive support by the architectural profession.

Important questions concerning planning and æsthetic effect underlie the study of dimensional co-ordination. The architectural profession has therefore a vital contribution to make to the subject, and it is gratifying to note that the B.S.I. committee has made special arrangements for liaison with the R.I.B.A. A considerable period of research still lies ahead, but the Study Group feels that a start has been made on the right lines.

Should success be achieved, the introduction of dimensional co-ordination would inevitably be a very slow matter, involving as it would the gradual re-standardization of a great many building elements. There would be a considerable transition period while old and new standards were both current. At the conclusion of such a period there should be available a range of components similar to the present British Standards, but with inter-related and compatible dimensions. Further, the proportions of the elements themselves and of the assemblies which they might compose should enable a wide range of æsthetic effects to be obtained. Of course the use of these standard elements should be no more compulsory on architects and on others than is the use of the present unrelated standards. In a large field of building, standard components are inapplicable or uneconomic, and in many buildings standard components are used to a limited extent in combination with other materials.

It should be no part of any proposals for co-ordination that standard parts should be used in such cases; nor that there should be any infringement of the architect's power to decide for or against their use in any particular application. It is to be expected that a co-ordinated range of standard items would find more extensive use than is possible for the present unrelated Standards; but their acceptance should depend only on their merit.

The Study Group has described the history and current development of dimensional co-ordination. It has examined and criticized proposals for co-ordination from an architectural standpoint, and has set out above its views on the lines along which co-ordination might develop so as to serve, rather than hinder, architectural design.

The question as to the practicability or otherwise of reaching co-ordinated sizes from a manufacturing angle has not been dealt with. The Study Group did not feel itself competent in this field; which is properly that of the British Standards Institution.

The Study Group feels that in presenting this report its useful work has been concluded, and that further research on the subject should be carried on at the British Standards Institution, where the R.I.B.A. is fully represented on the Committees concerned.

It is noted that Committee B/75 of the British Standards Institution is about to publish a First Report, entitled *Modular Co-ordination.*

Developments Towards Dimensional Co-ordination in Great Britain

The standardization of building materials and components has probably been carried further in this country than in any other. British Standard Handbook No. 3 lists summaries of 240 British Standards concerned with building, and very many of these are dimensional standards. Development of standardization was sharply accelerated by the shortage of materials during and since the war. There seems every reason to suppose that building materials and manpower will remain scarce for many years to come, and so long as this is so, standardization must inevitably increase. Since the war a very high proportion of the total building in Great Britain is sponsored directly or indirectly by local or central government. Concern for the national economy leads these bodies to encourage and sometimes require the use of British Standards in their work. Standard components are usually substantially cheaper than those specially designed, and therefore frequently have to be employed in building sponsored by private individuals.

The rapid increase in the number of standards and the rising proportion of building work in which they are employed have inevitably raised the question of dimensional co-ordination. An analysis of the present standards shows that not only have they not been based on any attempt at co-ordination, but that their sizes are so various that there is no common factor by which they can be unified. The war-time standards committee of the Ministry of Works made such a study, and stated in its second Report that any attempt at co-ordination on the basis of a single small dimension was impracticable.

In the post-war period numerous public and private bodies were faced with the responsibility of organizing extensive building programmes. In the absence of any general dimensional co-ordination in the building industry, each body had to make its own approach to the problem.

In the immediate post-war period the major building effort was centred on housing, and a great effort was made to use various forms of prefabrication in order to supplement the output of the normal building industry. Every type of house which made use of prefabricated components had to be based on some dimensional module. In the majority of cases this module was somewhere between 3 ft. and 4 ft. At first an effort was made to design a house which would employ entirely British Standard elements, but after some study this was found to be impossible owing to the discrepant sizes. Some of the houses which were eventually built were based on using a particular British Standard, for example metal windows, and arranging for the remaining components to be specially made to fit in. Others were composed entirely of specially-made parts. Such solutions were economically justifiable in the case of housing because of the very large numbers of identical buildings which were required. The housing field is certainly unique in this respect. While prefabricated and partly prefabricated houses played an important part in the post-war housing programme, which could not have been achieved so rapidly by reliance on traditional building alone, they were excessively expensive and their production has been gradually discontinued. How far their high cost could be attributed to the lack of dimensional co-ordination is difficult to assess, but it seems clear that had it been possible to make more widespread use of standard components already in production, substantial economies could have been achieved.

The school building programme was got under way in 1947, and is now developing into a major building effort. Two committees set up by the Ministry of Education have reported on the best means for securing the rapid and economical construction of schools. In contrast to housing, which can be planned on the basis of large numbers of identical buildings, the school building programme probably contains no two schools exactly alike. The problem of ensuring an adequate production of the necessary building components must therefore be on the basis of standards applicable to school buildings of different sizes and types. Both the Ministry of Education committees reached the conclusion that the only way to achieve this was by the use of some common dimension in the design. The Wood Report proposed a bay size of 8 ft. 3 in. for this purpose, and as a result a great many schools have been designed and built with this dimension as a basis. In some cases it has been used only in one direction in the plan, and in others in both directions as a rectangular grid. A considerable volume of components, including structural frame members, windows and slabs are now in production as a result. The Wood Report was succeeded by the Report of the Technical Working Party on School Construction. This Report reaffirmed the general conclusions of the Wood Report as to the need for a modular plan in school building. It took note, however, of difficulties which had arisen from the dimension of 8 ft. 3 in., which had proved to lead to rather crude planning, and which does not divide easily. The

Working Party Report therefore recommended that a bay spacing of 10 ft., which could be divided by 3 to give a planning grid of 3 ft. 4 in. if required, should form the basis of future work. It is understood that schools are now being planned on this basis, but there has not yet been time for any to be built.

Among the many schools designed and built on the basis of 8 ft. 3 in. those of the Hertford County Council, designed by C. H. Aslin [*F*], the County Architect, are of special interest. These schools are fully modular in both directions, and are composed to an unusually high degree of standard elements. Many of the difficult problems arising from modular design, such as the treatment of angles and wall intersections, have been solved, and the æsthetic implications of design with standard dimensions have been carefully studied.

An example on a somewhat smaller scale was the programme of railway station building carried out by the former L.M.S. These buildings were planned on a 3 ft. 4 in. rectangular grid and were constructed from specially-made standard units ordered in bulk. Here again the technical and æsthetic problems of modular design were made the subject of a considerable amount of research and the solutions adopted are of interest.

It was also found by the Study Group that even on individual buildings many architects chose to work on some sort of dimensional grid. This was particularly true in the case of factories and industrial buildings. In such cases the grid was often chosen with a view to giving economic spans for the roof or floor construction, but it was generally held that this approach left considerable latitude in the choice of a dimension.

While these different individual approaches to the problem of dimensional co-ordination are of interest in showing what can be achieved, they do not, of course, offer a solution to the problem on a national scale. Such a solution can only come through the activities of national bodies such as the B.S.I. In October 1947 the B.S.I. appointed a committee to study the subject, under the title Modular Planning. This committee has representation from the R.I.B.A. and other professional institutes, as well as from the principal associations of building materials producers, and of the building industry. This committee has taken the design implications of co-ordination very seriously from the start of its deliberations, and has accepted the view that any proposed system must be completely acceptable from the design point of view. It has established a small design panel for the purpose, and has obtained additional representation from the R.I.B.A. to serve on this panel. As the B.S.I. committee is still in the process of study it is impossible to comment on its work, but it can be said that it would appear to be proceeding on sound lines.

Developments Towards Dimensional Co-ordination in Foreign Countries

U.S.A. Under the name Modular Planning, dimensional co-ordination has been much studied in America, and has probably made more progress there than in any other country. The first proposals issued in the United States were the result of a study sponsored jointly by the American Institute of Architects and the U.S. Bureau of Standards. The proposals were published under the title of Project A-62. The U.S. Bureau of Standards has since issued a number of standard specifications based on the proposals, most of them being for the clay products industry. The approach followed in Project A-62 was that originally proposed by Bemis in 'The Evolving House', and was derived from the traditional American methods of building in timber and brickwork. While the size of the American brick was not standard, 8 in. by 4 in. was a common size, and most timber construction was built around the 4 in. by 2 in. stud. These facts led Bemis to propose that dimensional co-ordination should be based on the dimension of 4 in. He proposed that this dimension should be used in three directions, and that the resulting 4 in. cube should be the basis of design.

In Project A-62 this approach has been followed through with painstaking detail and its application to most traditional forms of building worked out. The dimensional system is treated as an imaginary framework locating all the elements in the building and the sizes of the elements are specified in relation to the grid lines. Broadly, it is proposed that the surfaces of structural elements should lie on the grid lines, and it is held that the 4 in. module gives sufficient flexibility for this to be achieved. The only major exception is floor construction. Here it is recognized that the need for economy will often require floor thicknesses which are not an exact multiple of 4 in. To get over this it is proposed that the top surface of a floor slab should lie on the grid, and that the lower surface should be brought down to the appropriate dimension by means of a cornice or similar treatment wherever it touches the wall.

Little information is available as to the extent to which modular planning is used in practice in America by architects; but where clay products—such as bricks—based on the modular standards are in use, modular buildings are likely to result. The usefulness of the system is limited by the rather small basic dimension of 4 in. For example, the number of possible modular windows which can be designed with multiples of 4 in. both horizontally and vertically is obviously very great. In practice it is understood that a certain amount of selection of the possible dimensions has taken place, but no definite basis for making such a selection is included in Project A-62, or any other official publication. A variety of planning grids are in use in American house construction and, in general, dimensions chosen have been multiples of 4 in. For example, the General Panel system of construction designed by Professor Gropius uses a 40 in. planning grid, and others use a 48 in. It was found that a dimension of this size was necessary in order to simplify production problems.

Sweden. Swedish work on modular planning was originated by the Swedish Standards Association. This Association began to issue standards for the Swedish building industry, starting with doors and windows. The Swedish Standards Association, after issuing a small number of standards, decided it was necessary to seek a common dimensional basis, and they therefore applied to the Federation of Swedish Industries for the funds to undertake the necessary research. As a result, two Swedish architects, Bergvall and Dahlberg, were commissioned to report on the problem. They issued a comprehensive document dealing with the subject in detail, to the extent even of standard positioning and the sizes for piping. Generally, their proposals followed closely on those of Project A-62; the basic dimensions being 10 cm. Existing Swedish bricks did not fit the proposed module, and they accordingly proposed a new standard size. The Swedish proposals follow so closely those of the United States, that nearly all the comments in the preceding paragraphs apply.

It is not known what use has been made of the Swedish proposals in practice, but it is believed that consideration is now being given to the use of a larger 'over-module' which would be some multiple of 10 cm. and which would reduce the number of possible sizes for the larger components.

France. The French Standards Institute has adopted 10 cm. as a basic unit dimension for standards in the building industry. France has, however, issued no report on the working out of this system in practice, and no study appears to have been made of the planning or detail of buildings on the basis of the 10 cm. module. While the number of standards actually issued in France is large, there seems reason to believe that they have not yet affected the French building industry to any considerable extent. It is understood that in Belgium standards are also being based on a unit dimension of 10 cm.

Germany. The principal German work on dimensional co-ordination is *Bauordnungslehre* (B.O.L.), by Professor Neufert. This work was published in 1939, and is a comprehensive treatize on the whole subject. Professor Neufert attempted to approach the subject historically, and also made a survey of systems of measurement and standardization in use among primitive peoples all over the world. He makes a case for a basic dimension of 1·25 metres, this case being based partly on a study of early German peasant buildings and partly on certain mathematical arguments on the implications of the metric system. He applies this dimension of 1·25 metres to domestic buildings, and proposes a double basic dimension of 2·50 metres to form the basis of design of factories and other industrial structures.

The dimension of 1·25 metres is obviously too large for human requirements, and indeed the primitive buildings on which it is based appear to have been designed with

supports spaced to give a suitable width for cow byres. The interest of the Neufert proposals lies mainly in the fact that they were given legislative sanction by the Nazi government. That portion of the German building industry which was concerned with barracks building and factory construction operated largely on the basis of the 1·25 and 2·50 metre grids. Numerous German architects also used the grids for other types of building, such as hospitals and flats. There seems little question but that considerable simplification in production took place and the system materially assisted the German building production during the war years. After the war there was a move to continue with dimensional co-ordination on the Neufert system, and Professor Gropius was asked to visit Germany and advise General Clay on the subject. Professor Gropius reported that the dimension was so unsuitable that the system should be abandoned. It is understood that the Germans are now basing their standardization on a system of preferred dimensions. In this system the alternative sizes are close together while the dimensions are small, but become progressively further apart as their size increases. However, the application of this principle to building standards has not yet been worked out.

Russia. Some documents on Russian standardization have reached this country, and it would appear that they are based on the use of a 10 cm. basic dimension, together with the use of 50 cm. and one metre for planning grids. Details of the Russian system are rather scanty and it is not known how far they have been put into practice.

Design Considerations

Requirements for Planning. It is necessary that any proposed system of dimensional co-ordination should be sufficiently flexible to allow buildings assembled from standard components to be planned with efficiency and economy. From the architect's point of view, a system of dimensional co-ordination should have the effect of enabling him to set out the building to a small scale on a grid with the knowledge that standard components can be used. The basic dimension on which the system of co-ordination is based will also determine the size of the plan grid on which the architect works.

Systems making use of a very small dimension such as 4 in. can not be regarded as presenting any difficulty from the point of view of planning, as it is clearly possible to plan with negligible wastage on such a basis. If, however, it is accepted that a somewhat larger dimension must be used in order to facilitate the economical production of the larger elements in building, then the choice of the right dimension becomes one of capital importance. If such a dimension is ill-chosen, there is a possibility that a considerable amount of building space will be wasted.

For dimensions of the order of 3 ft. a high percentage of wastage is most likely to occur in those parts of the plan containing small separate areas, such as lavatories, bathrooms, passages, etc. For halls and large rooms a close approximation to any given floor area can always be obtained. The smaller areas in buildings are generally conditioned by the need to provide space for human beings, obvious examples being the width of passages and the size of baths and beds. Hence it appears that the size of the human body should be the starting point in the consideration of the basic dimension. If the door opening which is derived from the human shoulder width is taken together with the necessary clearance and space for the frame, and for return walls, it will be found that 3 ft. 3 in. is probably the minimum dimension which can be used for general application. There are obvious advantages from the point of view of economy in keeping as close to this minimum as possible.

Various studies have been made from time to time of the percentage wastage in planning which results from designing any given building on a dimensional grid, and it has been demonstrated that a grid in the neighbourhood of 3 ft. 3 in. is very much more economical than one of 4 ft. or 2 ft. This economy derives from the fact that 4 ft. is unnecessarily wide for most of the purposes described above, while 2 ft. is impossibly narrow. In the report of the Technical Working Party on School Construction there is an interesting analysis of the effects of planning schools on a 10 ft. bay subdivided into a 3 ft. 4 in. grid. The room sizes resulting from this grid are compared with the existing space requirements of Ministry of Education regulations. The percentage wastage was found to be small enough for the Working Party to recommend the use of the grid in future school design.

Aesthetic Requirements. Perhaps the most serious of all difficulties encountered in connection with dimensional co-ordination is the problem of æsthetic expression. The dimensional system used horizontally must almost inevitably consist of dimensions which are simple multiples of one another. This in itself is not objectionable, indeed very many architects both of the past and of the present have habitually worked in this manner. If, however, vertical dimensions were also multiples of the same basic size, elevational systems would be limited to the proportions obtainable from the square, the double square, the treble square, etc. This would clearly be intolerable. It is therefore essential to legislate for a very much greater freedom in the vertical dimensions, and indeed there are many practical as well as æsthetic reasons for doing so. It has been held by some that the best way of ensuring freedom in design would be to leave the vertical dimensions out of all consideration, and to legislate only for co-ordination of horizontal sizes. There is, however, a grave objection to such a course in that although a dimension might originally be proposed for horizontal use only, it would inevitably tend to be applied vertically as well. This would arise immediately from the fact that so many building materials—for example, all types of board—are used both horizontally and vertically. It should therefore be regarded as essential to include proposals for vertical dimensions in any scheme put forward for dimensional co-ordination.

Some light is thrown on the problem by a study of the various systems of æsthetic control used by architects in the past. In particular, the studies of classical architects made by Jay Hambidge, and the work of the late Harry Roberts and of Mr. Leonard Roberts [*F*] are of interest. These and other studies all stress the importance of certain ratios, such as the Golden Cut, between the horizontal and vertical dimensions. The difficulty in applying these systems of proportion to dimensional co-ordination is that the vertical dimensions bear no simple relation to one another, or to the horizontal dimension.

There are certain mathematical series which seem to offer a way out of the difficulty, for example, the series which is known as the Fibonacci series, as follows:

1; 1; 2; 3; 5; 8; 13; 21; etc.

This series has the property that each term is the sum of the two preceding terms, and as the series progresses, the ratio between adjacent terms approximates towards the Golden Cut. The difference between the successive terms also increases rapidly as the series progresses. If 40 in. is considered as the basic horizontal dimension, a series of related sizes derived from the Fibonacci series might be:

8; 16; 24; 40; 64; etc.

Such sizes, used vertically in combination with multiples and sub-multiples of 40 in. horizontally, could be made to give an enormous variety of proportions without unduly multiplying the sizes of manufactured articles.

Considerable study and experiment remain to be carried out before such a system can be proposed, but it does seem to offer the necessary combination of æsthetic flexibility with simplification of the dimensional system.

APPENDIX I

Persons who have given evidence to the Group: P Cutbush [*A*], British Standards Institution; J. F. Williams, Messrs. Williams and Williams; Erno Goldfinger [*L*]; Professor Walter Gropius [*Hon. Corr. Member*], Harvard University, Cambridge, Mass.; E. Katona [*A*] and Eric White, Messrs. Longley; E. D. Hinchliffe and L. S. Podmore, Messrs. Hills' Patent Glazing Company; E. Maxwell Fry [*F*]; A. Leonard Roberts [*F*]; S. Rowland Pierce [*F*], Chairman, B.S.I. Committee B/75; C. R. Fowkes [*A*], Ministry of Health; W. W. Wells-Coates [*F*] and Miss Jane Drew [*F*], Mars Group.

APPENDIX II

Persons who have supplied drawings to the Study Group: Messrs. Arcon, W. Keatinge Clay, J. Emberton [*F*], C. Entwistle, Erno Goldfinger [*L*], Denis Clarke Hall [*F*], London Midland Region, British Railways, Denes R. Pogany [*A*], Martin J. Slater [*F*].

BIBLIOGRAPHY

U.S. A-62 Publications.

Modulutredning (Report on Modular Co-ordination)—Swedish Report.

M.O.W. Standards Committee 2nd Report.

M.O.E. Report of Technical Working Party on School Construction.

B.O.L.—Neufert.

Building Standards—B.S.I.

The Parthenon—Jay Hambidge, Yale Univ. Press.

Measuring Space and *Motion Research Study No.* 6, 1944/—Callaghan, J. and Palmer, C. John B. Pierce Foundation.

Anthropometric Problems in the R.A.F.—Morant, G. M. Brit. Med. Bull. 5, 1017, 1947.

Le Corbusier, *Oeuvre Complète*, 1938-47, p. 170, *Le Modulor*.

A Survey of Prefabrication—Harrison, Albery and Whiting.

Further Uses of Standards in Building—Ministry of Works.

An Introduction to Standards in Building—D. D. Harrison.

Organization, étude statistique batiment, bibliotheque—O.S.B.

No. 3. *Normalization et typization dans le batiment*.

The Evolving House—Bemis.

On 6 November 1946 the Architectural Science Board resolved that the Council be asked to approve the setting-up of a Study Group with the title 'Dimensional Standardization'. The terms of reference to be:—

'To consider and report on Dimensional Standardization in the light of the Official Report B.I.O.S. 575 prepared by the Ministry of Works Assessors' Team in Germany'.

This Recommendation was approved by the Council at their meeting on 14 January 1947.

The following have served as members of the Study Group:—

Miss J. M. Albery [*A*]; F. Austin; P. L. Cocke [*A*]; Anthony W. Cox [*A*]; R. Llewelyn Davies [*A*], (Chairman); D. Dex Harrison [*A*]; Birkin Haward [*A*]; J. C. Pritchard; M. Hartland Thomas [*F*]; Rodney M. Thomas [*A*]; R. N. Wakelin [*A*]; J. R. Weeks [*A*]; and *ex-officio* R. Sheppard [*F*]; L. P. Rees [*A*].

MODULAR CO-ORDINATION

This report was published on 19 February 1951 under the authority of the Building Divisional Council. The terms of reference of the committee were: (1) To act as the United Kingdom committee to receive, consider and report on any proposals concerning modular co-ordination received from the International Organization for Standardization (ISO); (2) To consider if any steps should be taken to develop modular co-ordination in the United Kingdom and make such recommendations as might be considered desirable.

The report makes it clear that a module has been defined as a unit to be used in the design of buildings and as a basis for the co-ordination of design and construction of standard building materials and components. The module would form the basis of a three-dimensional rectilinear grid which, when used for all types of building, would ensure that standard materials and components could be used together and would, in turn, fit into general design lay-out. It is stressed that modules which are units for basic design should not be confused with the usual units of measurement, such as inches or centimetres, although in practice modules may be expressed by any such normal units of measurement.

The preliminary work of the committee led them to summarize the advantages claimed for modular co-ordination as follows:

(1) Modular co-ordination would permit considerable simplification of the planning of buildings in the drawing-office and would result in a saving of drafting time. It would permit easier substitution of alternative materials and changes in specifications without the necessity of replanning.

(2) The co-ordination of materials and components by the use of a modular unit would save time and simplify the preparation of quantities.

(3) The co-ordination of materials and components to suit a modular system would result in easier and more economical field erection with a reduction in the amount of cutting, waste and fitting on site and a consequent reduction in the risk of damage to materials and components. Modular co-ordination would facilitate off-site and shop preparation of materials and components. Setting-out and subsequent supervision of building work and building assembly would be easier. The number of sizes of items required for any building would be reduced. Estimating and tendering would be simplified.

(4) The number of stock sizes of materials and components and the size of stocks held against demand would be reduced. The introduction of new designs and standards would be easier and manufacturers would know that such modifications would fit into existing plans or future lay-out requirements.

The committee recognized that certain risks, resulting from the application of modular co-ordination, might have to be considered. The choice of too large a module may produce, in effect, standardization in the design of buildings and lack of freedom of design. If the module is too small it may lead to an increase in the number of components to be regarded as stock sizes and to a demand for all possible combinations of small modular dimensions, and thereby exclude the advantages of more limited ranges of standard sizes.

The committee endeavoured to ascertain the amount of drafting time that would be saved in the preparation of detailed drawings when modular units are used, and the report quotes the following example, in an office where school buildings were being designed, using steel frames. 114 sheets of drawings were needed for the steelwork of the first school. When a modular scheme had been developed 33 sheets of drawings of component parts were necessary, after which each school required only one general lay-out drawing, so that 41 sheets of steelwork drawings were adequate for eight schools, although they varied considerably in lay-out.

During their study the committee came to the conclusion that the advantages in manufacture and site work to be looked for by the introduction of a module are greatest where large building elements are concerned, such as slab and sheet materials, windows and beams. Smaller units, for instance bricks and tiles, are more flexible in use and can be assembled to any overall dimensions without much loss of time or material. For this reason the committee are of opinion that small modules, such as the 4 in. and 10 cm. which are being developed abroad, are misconceived because stress is laid on just that part of building work in which there is least to be gained from modular standardization.

The application of modules to the larger elements must be related to the dimensions of the basic planning factors which occur in building design, and these are derived from the human use of buildings. Door openings, passages, w.c.'s, and so on, have minimum sizes derived from the average shoulder width of human beings. This dimension, with the necessary clearances, would establish the plan module as somewhere in the range of 33 in. to 48 in. The committee therefore decided to study the application of a horizontal module of 40 in., with particular reference to the relationship between this module and a vertical module, but alternative modules of the same order of magnitude were examined for purposes of comparison, especially that of 3 ft. Plans based on the 40 in. module seem to have certain qualities of scale and proportion that are superior to those arising from the use of the smaller grid, especially as it allows the use of a centre-line grid arrangement which may lead to some additional advantages in the practical application of modular co-ordination.

The committee agreed that the establishment of a vertical module is necessary if the full advantages of modular co-ordination are to be obtained. Although the vertical module must be related to the horizontal module, vertical increments limited to 40 in. would be too large for many purposes. To provide flexibility in designing it would be necessary to use a smaller module, preferably a simple fraction of 40 in., and a module of 8 in. seemed to meet the case. To reduce the number of standard sizes resulting from so small a module the committee suggest that a range of preferred sizes should be agreed, all being multiples of the basic vertical unit, so that components could be arranged in a variety of patterns, care being taken that the proportions should not be merely squares, double squares, and so on. The committee suggest that these vertical preferred sizes might well be 8 in., 1 ft. 4 in., 2 ft., 2 ft. 8 in., 3 ft. 4 in., 5 ft. 4 in., 6 ft. 8 in., 8 ft. 8 in., 10 ft., 13 ft. 4 in., and 16 ft. 8 in.

Practice Notes

Edited by Charles Woodward [*A*]

IN PARLIAMENT. Ministry Architects. Asked how many architects his Department employs on housing; how many of them are engaged on producing detailed plans for a three-bedroom house costing less than £1,000; and if the plans will be published, the Minister of Local Government and Planning replied: Eight architects at headquarters and 82 in the regions. Part of their duty is to make a continuous study of possible improvements in design and reductions in cost. Plans have been, and will continue to be, published from time to time. (6 March 1951.)

Historic Buildings, Wymondham. Asked if, for the reassurance of property owners, he would reconsider the list of properties in Wymondham, Norfolk, recently scheduled by him as buildings of architectural or historic interest; and if he will give an assurance that in future owners of property will be consulted before scheduling takes place, the Minister of Local Government and Planning replied: The scheduling of buildings does no harm to owners, and it would not be appropriate to consult them in this matter. (13 March 1951.)

Model Bye-laws (Committee). Asked when publication may be expected of revised model building bye-laws, the Minister of Local Government and Planning replied: I am setting up a committee to advise me on this subject, and have invited local authority associations and professional bodies to submit names. (20 March 1951.)

Building Ratio. Asked how many applications have been received from local authorities by his Department to alter the existing ratio between houses built by the council and those built under private licence; and on how many occasions he has given his approval for this to be done, the Minister of Local Government and Planning replied: Seventy-five, of which five have been approved.

Asked, further, if he would say on what principles he approves or otherwise of applications, and whether he was aware that the regional officers do not encourage, and in fact discourage, local authorities from submitting applications of this kind, the Minister replied: I am not sure, on the last part of the supplementary question, whether that is so. I have said several times since I have occupied my present office that I am quite willing, on case shown, to increase the ratio. There is no abstract principle in the matter. It is just a question of what representations local authorities make. (20 March 1951.)

Houses (Disposal). Asked why it is the policy of his Department to offer houses, of which it has to dispose, to sell and not to let, the Minister of Works replied: All property, other than for public service, is held by my Ministry for disposal only. The Ministry is not a housing authority, and when it has houses for disposal it tries to sell them outright to the local authority. (20 March 1951.)

Building Regulations (Contraventions). Asked on how many occasions building regulations have been contravened in the past four years by private individuals, local authorities, private companies, nationalized boards and Government Departments respectively; and in how many cases were prosecutions instituted, the Minister of Works replied: In the four years 1947-50 my Department and local authorities investigated 19,489 cases of alleged contravention of Defence Regulation 56A. Records do not show the type of concern involved in the alleged contraventions where no proceedings were instituted, and the information could not be obtained without an undue amount of research. Proceedings were instituted in 1,189 cases, involving 1,523 private individuals, 507 private companies and two boards of nationalized industries. (20 March 1951.)

Council Houses. Asked when he proposes to publish plans for a three-bedroomed house costing less than £1,000, the Minister of Local Government and Planning replied: As I stated in reply to Questions last Tuesday, my advisers and I have been studying various plans which have recently been prepared and I hope soon to issue a circular to local authorities on the designs of council houses, seeking to combine economy with the maintenance of essential standards. (20 March 1951.)

R.I.B.A. FORM OF CONTRACT. Insurance Clauses. The revised clause 15 (*b*) (*B*) requires the employer to maintain a proper policy of fire insurance on the 'existing structures *together with the contents thereof*.' In the case of a new building, clause 15 (*b*) (*A*) does not include the words in italics.

It may happen that a building owner wishes to store personal property in parts of a new building which have been completed, although the contractor has not given up possession. In such a case the building owner should be advised to take out a fire insurance policy to cover this risk, which is not included in the joint fire policy under clause 15 (*b*) (*A*); and also to take out a policy covering burglary.

MINISTRY OF LOCAL GOVERNMENT AND PLANNING. Circular No. 11 dated 21 March states that functions relating to housing have now been transferred from the Ministry of Health to the Ministry of Local Government and Planning. These include the issue of Form M (sheet steel) by h g authorities on behalf of the Ministry of Local Government and Planning instead of the Ministry of Health. The Departmental symbol will still be H.E.D., and the existing procedure for completing the form will remain unchanged.

TECHNICAL INFORMATION AND DOCUMENTS UNIT. As from 1 April 1951 this unit became part of the Information Services of the Department of Scientific and Industrial Research, and for the present its address will be Lacon House, Theobalds Road, London, W.C.1. The unit has a large collection of unpublished documents containing information on the production and use of substitute materials. There is a reading room at Lacon House for those who wish to make detailed study of drawings and documents.

MINISTRY OF WORKS. Contractors Plant. Owing to increases in the wages of drivers and operators, amended rates have been recommended to replace those in the fourth column of Part II of the Third Edition of the Schedule of Rates for Hire of Plant (P.I. 47/1, M.O.W. 15/51.)

The new rates became effective so far as those in the fourth column of the amended schedule are concerned on 12 February, and those in the fifth column on 5 March. The further increases of threepence each per week became effective on 26 March and 2 April respectively. Copies of the amended Schedule can be obtained from The Secretary (A.S.72), Ministry of Works, Lambeth Bridge House, London, S.E.1. (P.I. 47/1, M.O.W. 29/51.)

LAW CASE. Hunter v. Agadjanoff (12 March). King's Bench Division. In this action a builder claimed £150 15*s*. 9*d*. for repairs to property, one of the defences being that the builder had done work in excess of that authorized by the Defence Regulations without previously obtaining a licence, and that therefore the cost was irrecoverable.

The premises consisted of basement, ground, first and top floors, and each of the floors was let separately. On behalf of the builder it was contended that under the Control of Building Operations Order 1950 the 'free' allowance of £100 was effective for each of the separate entities as well as the communal part of the house.

His Lordship, in giving judgment for the builder, said that the evidence was uncontradicted that whether these premises were or were not constructed for separate occupation, they were at all material times separately occupied by four different tenants. Emphasizing the words 'any person may carry out on any single property' in the Order, and then the definition of a property in the proviso to Article 4 of the Order, which in substance said that any portion of a building *de facto* separately occupied should be deemed to be a separate property 'as also shall any part of the building which is not separately occupied', his Lordship construed that to mean that in the case of these premises any person might spend £100 on any or all of the four parts separately occupied, and also £100 on the balance of the building—the parts used for communal purposes—making a total of £500. He therefore found that the Order exonerated the builder from the requirements of Sub-Regulation 2 of Defence Regulation 56A in relation to the expenditure of the sum of £150 15*s*. 9*d*., and gave judgment accordingly. (THE ESTATES GAZETTE, 17 March 1951.)

A corner of the main entrance lounge on the ground floor. The staircase, of white marble, leads to writing and reading rooms on the first mezzanine. The bas-relief on the column in old gold is by Luciano Minguzzi

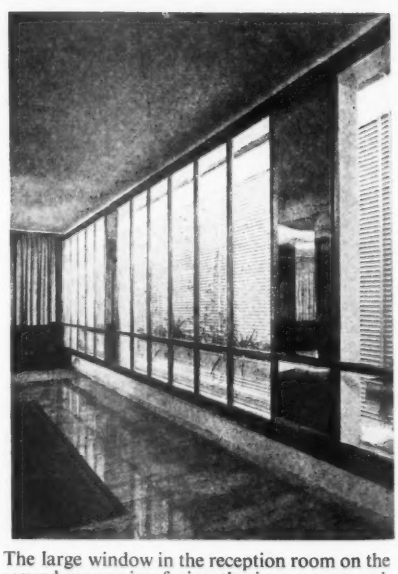
Grand Hotel Duomo, Milan

Architects: Aldo Avati and Melchiorre Bega

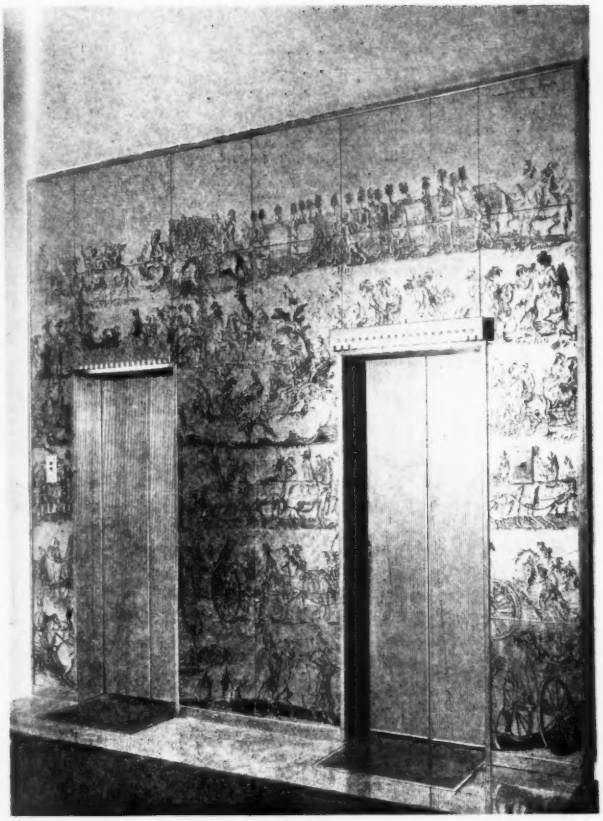
THE NEW Grand Hotel Duomo at Milan, overlooking the cathedral, has been built into an existing bomb-damaged building which was erected in the second half of the 19th century to the designs of Giuseppe Mengoni. Town planning restrictions required the retention of the existing monumental arcaded façade, and consequently of the original storey heights. The building had five storeys above ground, the upper storeys being each no less than 19 ft. high. The architects were thus presented with an awkward problem in obtaining a reasonably economic planning of the bedroom floors. They have solved it with great skill, and in doing so have evolved an entirely new form of suite for the first class hotel.

They have provided in each of the 19 ft. high bedrooms an internal balcony. On this balcony the beds are placed, leaving the floor of the room for sitting-room furniture. The balcony is reached by a little staircase in the room, and the whole of the two-level arrangement makes an unusual and charming interior. The front edge of the balcony is suspended from the ceiling, and the balustrade is open so that the whole interior is very well lit by the tall windows which, across the Via San Raffaele, face the cathedral.

At the back of the building the storeys are of normal height, so that each suite is approached from a corridor on both levels. The internal bathrooms are placed on the upper level, and can thus be reached by the hotel staff for cleaning without disturbance of the occupants of the sitting-room during the day. The arrangement is shown in the two plans at the top of



The large window in the reception room on the second mezzanine facing the inner courtyard. The frames are gilded anodized aluminium, the flower boxes in white painted metal and the floor of Trapani marble

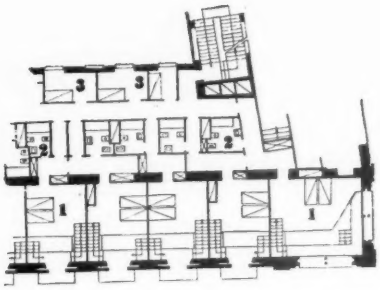


Above left: the lift doorways on the reception floor. The wall is faced with gold-tinted glass over old prints. The lift doors are gilded anodized aluminium. Above right: the reception counter. The floor is red granite, the walls marble, the column decorated by the painter Fornasetti and above the mahogany counter (with brass insets) is a glass and gilt panel with an old print

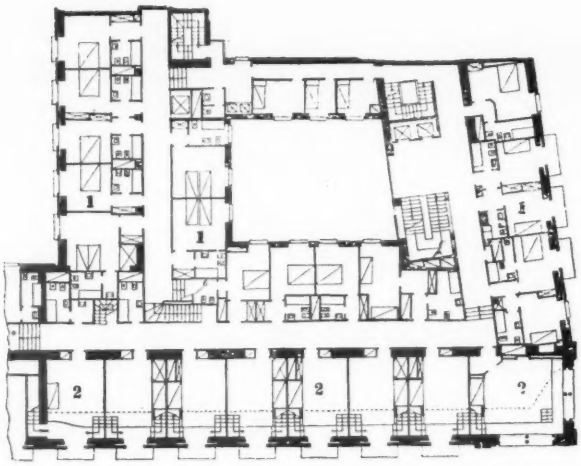
page 238. The other bedrooms at the back of the hotel follow present-day practice of internal bathrooms and access lobby. There are nine storeys of normal height, two below ground and a roof garden. Altogether there are 160 bedrooms and 30 suites.

The hotel is entered from a side street, there being a very tall pavement arcade on the front facing the cathedral. This original high ground floor storey has been divided into three levels. On the lowest level, facing the arcade, are shops. In the hotel itself the main lounge extends up through the two lower levels, leaving a first mezzanine over the remainder. (See the illustration on the opposite page.) On this partial mezzanine are writing and reading rooms, barber's shop and beauty parlour. The second mezzanine has a reception suite, various sitting rooms, breakfast room and administrative offices. The roof garden has an area of 1,200 sq. metres, and gives wide views of the cathedral, piazza and city.

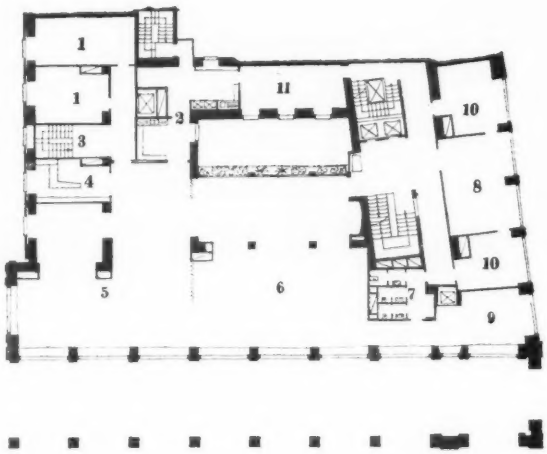
The main entrance lounge. The panels on the balustrade are aluminium decorated by the painter Fornasetti. The wall below the balcony is faced with strips of mahogany and white painted wood



Plan of part of bedroom floor showing balconies in the suites. Key: 1, bedroom balconies in the suites. 2, private bathrooms in the suites. 3, secondary bedrooms for hotel floor staff



Above right: Typical bedroom floor plan. Key: 1, ordinary bedrooms for guests. 2, suites, at sitting room level

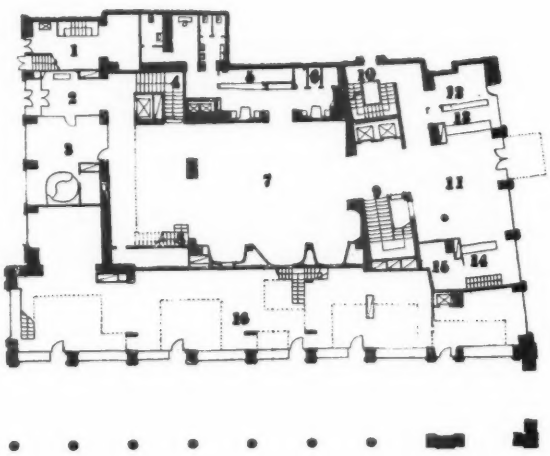


Middle right: The second mezzanine plan. Key: 1, children's rooms. 2, office. 3, stair. 4, cloaks. 5, breakfast room. 6, reception room. 7, lavatories. 8, conference room. 9, men's retiring room. 10, small private rooms. 11, service

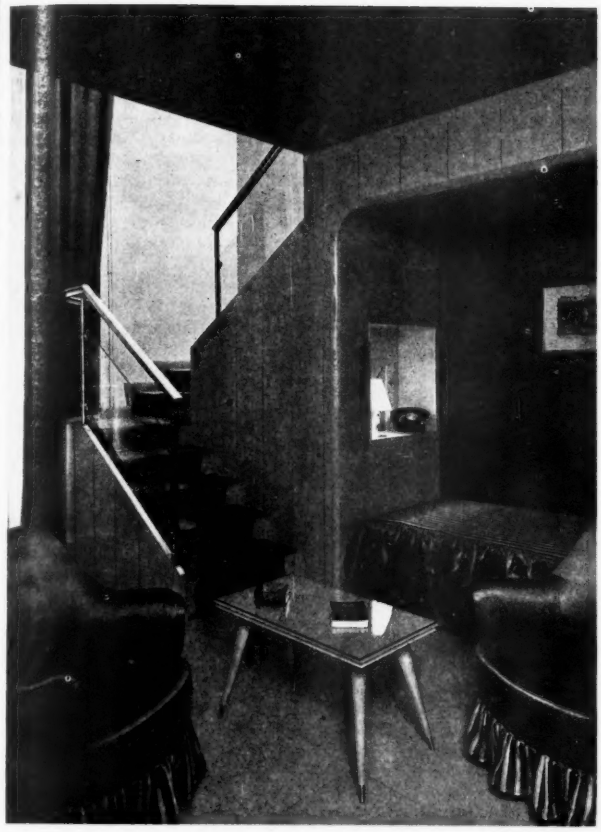
The basement is mainly occupied by a large 'salone-taverna-ristorante-dancing'. This has a separate entrance from a side street but is also accessible from the main hotel lounge.

The hotel is very thoroughly equipped. The heating and refrigeration plants provide conditioned air for the basement, radiant panels in the public rooms, and conditioned air in all guest rooms; this last can be regulated by room occupants. There are three passenger lifts, a baggage lift and two goods lifts. The 600 doors in the building are of anodized gilded aluminium, and the floors are of several varieties of marble.

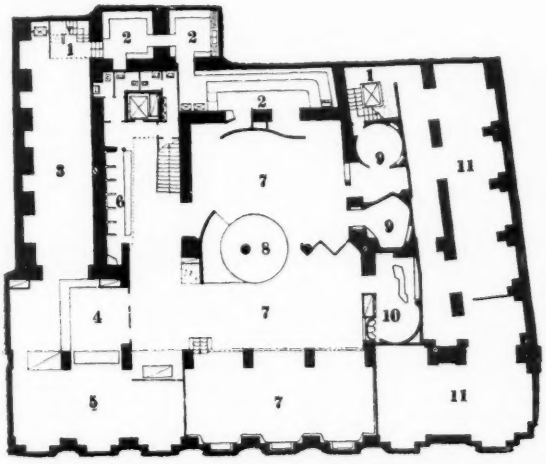
This well-equipped luxury hotel shows to the full Italian skill in handling fine materials. This is well shown in coloured illustrations in the September 1950 number of DOMUS, the Italian architectural periodical to whose editor we are indebted for the loan of photographs and permission to reproduce the plans. Readers who wish to study this interesting building more fully can do so in the periodical room of the R.I.B.A. Library.



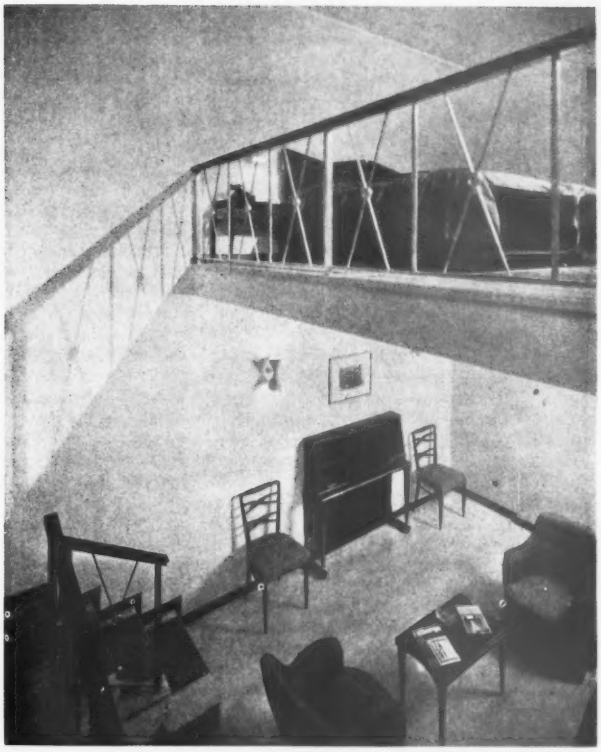
The ground floor plan. Key: 1, service entrance. 2, entrance to basement restaurant. 3, bar. 4, stair to basement restaurant. 5, cloaks. 6, telephones. 7, main lounge. 8, stair to first mezzanine. 9, main stair. 10, service stair. 11, main entrance. 12, baggage. 13, porters' counter. 14, reception counter. 15, telephone exchange. 16, shops



Each suite has a small staircase leading to the balcony where the beds are placed



The basement floor plan contains a large 'salone-taverna-ristorante-dancing'. Key: 1, service stair. 2, coffee bar service. 3, kitchen service. 4, restaurant service. 5, kitchen. 6, cloaks. 7, the restaurant. 8, dance space. 9, small dining rooms. 10, bar. 11, heating, refrigeration and air conditioning



The three photographs on this page are of typical suites in which the balcony forms a bedroom over the sitting room below. This arrangement arose from the need to retain the existing storey height of 19 ft. A door from the balcony leads to the bathroom and an upper corridor

An Architectural Review

By C. R. Knight, M.A., B.Arch.(L'pool) [*A*]
Professor of Architecture, Auckland University College

THERE IS A well-known axiom that 'The architecture of any period is expressive of the social customs and religious beliefs of that time.' It follows that any such expression of the life of a people is governed or disciplined by the building materials available and the knowledge of building science prevailing at the time.

The validity of the axiom is beyond question: even in periods of military, political or religious dictatorship the subjection of the masses to autocracy is manifest in the buildings, recording correctly the subjection of their freedom of expression. Autocracy may express a preference for a style or mannerism characteristic of a previous age and direct the architectural expression accordingly, as for example the interest in Imperial Rome shown by dictators of recent times, or by the spontaneous rebirth of old principles which occurred during the Renaissance; but the adaptations necessary to meet the requirements of the period leave no doubt as to the period or to the authorship. There may be and probably is a certain imposed artificiality in such cases, causing speculation as to the thoughts and ideas of the masses had they been able to express themselves freely, but this very artificiality is expressive of the state of affairs existing at the time.

It is of some interest to reflect upon the architecture of our time in terms of the axiom stated.

The democratic state emphasizes freedom of opinion and action as a precious heritage won at great cost against those who would impose another principle upon it. The architectural expression of this freedom is variety—a certain disunity but not necessarily disharmony. If it was carried to an ultimate conclusion such variety would create chāos, but that would be the natural expression of a state without government. On the other hand, complete unity or uniformity in architectural expression could only be obtained by an architectural dictatorship which is the resultant of an autocratic state. Such a condition inevitably destroys the spontaneous creativeness of the individual artist.

Theoretically, democratic government is not dictatorial at all. It establishes rules of conduct in the common interest which are acceptable to the majority. These rules or laws are therefore subject to endless argument, revision and amendment. This apparent disunity is often mistaken as a sign of weakness when in fact it is really one of vigour and awareness of the importance of maintaining the principles of freedom. It is astonishing how united the democratic state becomes the moment it is challenged by an aggressor. It is well to recognize that the individuality of our architectural design is a correct and natural one for our way of life. Those who would impose a rigid system of order in the interests of architectural unity should recognize the limitations of such a policy, because ultimately it would lead to architectural autocracy.

A recent town planning report dealing with the extension of an existing city recommended the adoption of a pre-conceived architectural exterior to its principal thoroughfare in the interest of civic dignity, although it was recognized that some of these buildings would not be required for twenty-five years or more. It is easy to understand the town planner's enthusiasm for a 'set piece', and follow through his reasoning to its final conclusion. Yet surely this is a policy of despair which, even if it achieved its objective, would create a piece of stage scenery out of touch with the life of its day. In any case, what right have we to dictate the manner of design for buildings required twenty-five years hence?

Town planning regulations generally are often too restrictive and thus overstep the bounds of good government. They should be statements of principle within which freedom of conception is possible.

It is generally fairly easy to determine the rights and wrongs of material questions like health and convenience, and to determine fairly accurate principles governing their application to a set problem, but if æsthetics are in any sense rigidly controlled architectural design ceases to be a spontaneous expression and becomes merely the puppet of authority.

In the individual building or in group design a similar conflict between autocracy and individualism is apparent. On the one hand local authorities or commercial interests impose through their architects living conditions for the people in the abstract, that is to say, standardized dwelling units designed for unseen family units who must fit their form of living to the predetermined pattern. Great human beehives are designed on a principle of economic mass living in which the individuality of the tenant can be expressed only in furniture, bric-a-brac or colour schemes which sometimes produce startling results, perhaps in protest against architectural dictatorship.

On the other hand, the individual tastes and manner of living of the client are given pre-eminence. It was reported recently that a well-known contemporary architect liked to spend a week-end with his client's family studying their way of life before attempting to create their home. In this case, we would expect a maximum expression of individualism which is essentially that of a democratic people.

Similarly, large factories or commercial enterprises have their buildings designed about their individual needs, the architect analysing the material processes or functional need and sequence as the basis of his building design. But the smaller factory or office or shop fits itself as best it can within some existing structure, hoping no doubt to be able one day to have a building designed about its special needs.

Much of this is inevitable because it expresses correctly the economic forces at work within a democracy, but realization of the facts helps to clarify our thinking. It is possible to conclude that the freedoms inherent in the democratic way of life are best expressed as designs for individual needs disciplined by common laws of behaviour. The family unit is the basis of our urban life, but it will not flourish nor will it submit to an imposed artificial dictatorship either political or architectural. It is better to direct architectural thought towards architectural conceptions which give the maximum consideration to individual needs within a pattern of traffic and zonal control, and thus express more adequately the fundamental principles of democratic life.

It is possible, of course, to reorganize our social organization but under the system of free periodic elections no such reorganization can become permanent unless and until it is supported universally and continuously. The elector is notoriously fickle in his judgments and it is easy to imagine the despair of a social reformer who has achieved a measure of his programme while in power if he finds it is rejected and abandoned at a subsequent election. That despair leads to a desire for autocratic power so that the reform can be imposed without hindrance—a fallacy, of course, because the right to choose is as fundamental to a democratic state as are its freedoms. This situation has its counterpart in architecture and civic design. The architectural reformer, finding his policy unacceptable to the masses, talks of lost opportunities and the need of control being imposed upon the unwilling community. It is very proper to agitate for reform. Progress is made that way. But its acceptance must be a free choice of the community.

A characteristic feature of the democratic age is the importance of commerce. The productive power of a country and its ability to distribute goods internationally and locally provides the key to its monetary wealth and consequently to the standard of living enjoyed by its people. In periods of trade depression, architecture does not flourish, not so much because of the need of wealth for building but rather to the lack of incentive given to new constructions by the absence of material prosperity. All countries are not equal in productive capacity and some are more advantageously placed with regard to markets. Hence there is a variation in the living standards in the countries comprising the democratic world. This variation intensifies competition, the less fortunate endeavouring by various means to secure the markets and hence the prosperity enjoyed by the favoured nations. These in turn protect themselves by the creation of artificial barriers to free trade, or by other means. Thus the whole system becomes engrossingly complex and immense in scope. Under these conditions

commercial enterprise in some form is the major activity of the citizens of a democratic state. Further, the commercial interests represent the power behind the government. Hence a materialistic viewpoint is always in the forefront of national policy.

This concentration of effort upon material prosperity has lowered æsthetic standards because, unfortunately, it has been assumed that æsthetics has little to do with material welfare. This is erroneous because it can be proved that the æsthetic side of human nature is not something apart, to be taken out and enjoyed at moments of leisure, but an essential working part of the unity that is man. This truth is being recognized slowly by the commercial world as far as it relates to architecture and the environs of the workers, although it has been recognized longer as an asset in the article produced or sold.

The conception of an assumed duality of man's nature combined with a concentration upon material success weakens the impulse to study æsthetic values. The training for commerce is exacting and thorough, while æsthetic education is intermittent and remote from everyday affairs. When, therefore, successful business men become the leaders of local and national government their knowledge of the æsthetic is deficient when compared with their understanding of material issues.

This state of affairs is in contrast to other periods, notably the 17th and 18th centuries, when the ruling class was given an exacting balanced education in preparation for control of local and national destinies. Consequently, in those days architecture was generally more gracious and refined, and perhaps less functional.

It might be asserted that as the architect today is fully competent in the æsthetic field, that should ensure adequate consideration of the matter. It is right, of course, for the architect to be the authority in his own field, but when the gap is very wide between client and specialist it becomes difficult if not impossible to reconcile their points of view, leading to frustration and in some cases despair. It means that the specialist is often passed by in favour of the alleged 'practical man'. The educator is similarly frustrated when those unable to reach the standard of his lowest grade find it easy to sell their designs in the commercial world.

The professional reaction is a demand for registration or certification of skill before practice is permitted, whereas no such rule or regulation was necessary when the education of the ruling class was balanced properly between material and æsthetic values. The fact that the power of certification is granted may be an indication that the importance of æsthetic understanding is becoming recognized, or is it merely a recognition of skill in the practical matters of building, organization and construction? Perhaps the case is stated too simply, because wider issues are involved, particularly the complexity of the modern world and the immense field of study in every specialized activity making it more and more necessary to have certified specialists for a community unable to distinguish good from bad. The requirements of general education still remain the fundamental issue, and this on analysis shows the need of a better balance between material and æsthetic values, and in particular an awareness of their unity or oneness in human affairs.

It is not implied that art generally is inactive; on the contrary, there is great vitality and enthusiasm in contemporary art. It is the isolation of art from the everyday world of living which is the matter of concern, and this, it is felt, is due to a lack of understanding of its importance in the full enjoyment of life in the democratic world of today.

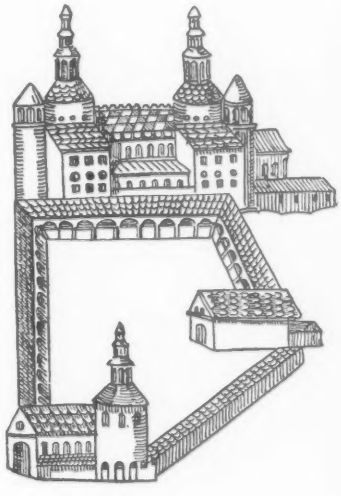
The fabric of the democratic world is built upon the findings of pure and applied science. These have revolutionized methods of production, utilization, and transportation, and made it possible to build larger and larger urban communities. As a result, fresh problems of congestion and amenity beset us, calling urgently for solution. It is not an exaggeration to say that the average city of today is similar to a factory trying to meet an enormously increased demand with out-dated machinery. Yet, unlike the factory, the city can not afford to scrap its existing works and build afresh.

In the architectural field the multiplicity and complexity of problems no longer permits leisurely contemplation. It has become a matter of intense organization of many requirements and skills with 'speed' an urgent necessity. At the same time science presents the building industry with many new materials, new methods of construction, a variety of improved systems of heating, lighting, acoustics, and mechanical equipment of many kinds, together with a host of labour-saving conveniences which together revolutionize the architect's function. Further, the concept of architecture is governed or at least disciplined by 'cost', which in a commercially-minded world often becomes the determining factor in the approval of designs. Under these circumstances the architect adopts new values. He becomes skilled in co-ordination, organization and direction. He tends to concentrate upon material matters, bringing him in line with the prevailing outlook of the commercial world. Æsthetic considerations, previously paramount, while not ignored, become blurred in the engrossing and pressing problems with which he is faced.

This situation has brought under scrutiny the very content of architecture and the functions of the architect. It is not strange that previously accepted principles of composition have been the subject of enquiry which, while not proving their invalidity, has demonstrated their inappropriateness to the modern problem. Some architects adopted frankly a purely material or functional approach to design, thus emphasizing the materialistic content of contemporary life, but it could not satisfy because it intensified the expression of incompleteness in a world where æsthetics is left to chance. At the moment the approach appears to emphasize and develop an æsthetic based upon 'use' rather than 'traditional' or 'conventional' values. This attitude gives greater promise of success because it comes closer to the essential qualities of the world in which we live.

Thus the architecture of today expresses our life. It shows clearly the underlying pattern, records its strength and weakness, and emphasizes the problems which trouble it: the insistence on freedom and the constant battle with autocracy; the concentration upon material matters and neglect of the spiritual, with perhaps a faint but clear recognition of its unbalanced state. These may be seen in the disorganized urban pattern, the attempts at correction by persuasion and by dictatorial rules and regulations, the lack of unity in architectural design, its materialistic flavour and the individual masterpieces which now and then enlighten the world.

Architectural concentration is upon the adequate use of new materials, methods of construction and new appliances, and the search for an adequate idiom of expression. The latter is not a problem of style, for eclecticism has little place in such a world. It is a search for architectural truth, a task worthy of the most discriminating research worker. It is obvious that a unified architectural expression is impossible while the world itself is disunited. It is also obvious that a proper balance of human values can not be expressed universally until it prevails in human understanding. There is no doubt about the achievement of greater skill in the utilization of material conveniences, because the world demands and can evaluate these things, but progress in the development of the æsthetic will be slower because its significance is not fully understood and its evaluation uncertain. A world which shows intense interest in the mechanical workings of a butterfly's body to the exclusion of an understanding of its form and colour shows a lack of balance in the study of life which it would do well to correct.



Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialized branches of research and will willingly answer inquiries.
The Director, The Building Research Station, Garston, near Watford, Herts.
Telephone: Garston 2246.
The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.
Telephone: Busby 1171.
The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.
Telephone: Princes Risborough 101.
The Director, The British Standards Institution, 28 *Victoria Street, Westminster, S.W.*1.
Telephone: Abbey 3333.
The Director, The Building Centre, 9 *Conduit Street, W.*1. *Telephone: Mayfair* 8641-46.
The Director, The Scottish Building Centre, 425-7 *Sauchiehall Street, Glasgow, C.*2.
Telephone: Douglas 0372.

Tuning the Royal Festival Hall. A representative of the JOURNAL had the good fortune to attend a concert at the Royal Festival Hall in the second series of tuning experiments. The London Symphony Orchestra, under Mr. Basil Cameron, played a selection of pieces ranging from Beethoven to Britten, Mr. Ernest Lush played Chopin and Viennese waltzes, and B.R.S. contributed salvoes from two pistols, one small, one large. There was a full audience —assembled to provide an 'audience factor' —which obligingly obeyed the instructions of a humorist at the microphone. Many architects were in the audience.

This must be the first time in the history of acoustics that a building has been deliberately tuned by the adjustment of absorbent and reflective surfaces. The first series of tests had shown that the hall had very good acoustic properties but was rather over-absorbent. In this, the second series of tests, some areas of absorbent material had been removed, mainly from the back walls of the tiers of boxes.

Not being an 'acoustician'—to use a new term that seems to have crept into use recently—the representative of the JOURNAL can express no opinion about the acoustic qualities of the hall beyond saying that he was entranced by the crisp clarity and full tone of the orchestral playing. There seems no doubt that generally the hall is a first class musical instrument; whether it is so in all parts of the seating is a matter for the acousticians to decide and, if it is not, to make adjustments accordingly. One gathered that B.R.S. had recording instruments hidden about the building, but acoustics being still an art, after all the science has been applied, it was gratifying to observe the presence of many experts. Among these were Mr. Robert H. Matthew [*A*], Architect to the London County Council and the Deputy Architect, Dr. Leslie Martin [*F*], Mr. Hope Bagenal [*F*], the acoustic consultant and Mr. William Allen [*A*] who was accompanied by several of his colleagues from B.R.S.

The noise exclusion part of the acoustic problem has been most successfully solved. In pianissimo passages or when the audience were asked to remain silent there was not even a hint of the electric railway which passes close to the building; indeed, when coming out of the hall proper through the double doors into the foyers and passages, one notices as a new sound the distant hum of London. Readers will recollect that the main element in this is a double skin construction. The special construction and the general acoustic scheme were described in the JOURNAL of August 1949.

Plumbing and Drainage. The Minister of Works set up an *ad hoc* committee to study American methods of plumbing and drainage, in the light of observations made on the subject in the report of the Anglo-American Productivity Team. The Royal Institute was represented on the committee by Mr. Michael Waterhouse [*F*], Past-President.

The Report of the *ad hoc* committee has now been published, and succinctly expresses ideas that have been in the minds of architects in this country, as well as other subjects that deserve close attention. The summary of conclusions reached by the *ad hoc* committee epitomizes the body of the report so well that it may be quoted in full, as follows:—

(*a*) Detailed schemes for plumbing and drainage should be prepared as part of the main design of any building before tenders are invited and the work should always be entrusted to qualified designers with specialized knowledge.

(*b*) Local Authorities and Water Undertakings should regularly review their requirements with a view to ensuring that in no case is a sound modern development in plumbing and drainage unnecessarily prevented from being brought into use.

(*c*) Examination and approval of plumbing and drainage schemes and inspection of the work should be undertaken only by officers with specialized knowledge, and provision should be made for inspection while installation is actually in progress. The Committee recommends that the Royal Sanitary Institute and the Institution of Municipal Engineers should consider making appropriate provision in the syllabus and/or the conditions of their existing examinations, or establishing a new examination in consultation with the plumbing trade to ensure that successful candidates possess specialist qualifications covering the whole range of work in this field.

(*d*) For water supply, advantages are offered by the system in which cold water storage cisterns are provided only to supply hot water tanks and all other outlets are connected to the mains; the possibility of using this system should be carefully considered whenever new water schemes are being installed or old schemes substantially extended.

(*e*) In designing plumbing lay-outs for water supply in buildings more attention should be paid to close grouping of appliances, simple joints, adequate space for pipework and components and easy access for maintenance.

(*f*) The one-pipe system of soil and waste disposal should be more widely adopted and its application to small houses further studied and developed; and the Committee consider it would be an advantage if the British Standards Institution specified a wider range of British Standard Specifications for suitable multi-branch fittings.

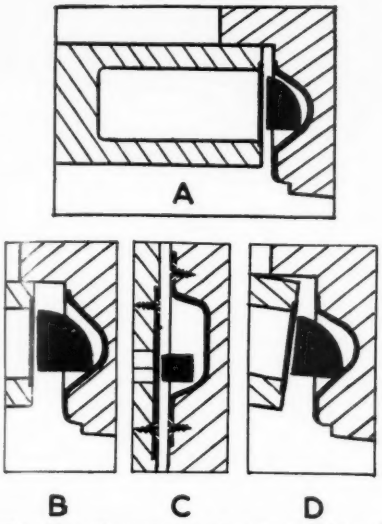
(*g*) There is considerable scope for effecting economies in underground drainage by using only the most suitable pipe sizes, reducing the number of manholes to a minimum, eliminating intercepting traps from connection to new sewerage systems and avoiding excessive use of concrete under and around pipes.

(*h*) Prefabrication of parts of plumbing systems in well-equipped site workshops should be adopted whenever the scheme involves a sufficient number of repetition jobs.

(*i*) There is urgent need of publicity for up-to-date developments with detailed examples of their practical application; the knowledge is available but its distribution is insufficiently wide. The Committee therefore welcomes the decision of the Building Research Station of the Department of Scientific and Industrial Research to undertake the preparation of a new document dealing with modern developments in plumbing and drainage in considerable detail.

Valley Tiles. Restrictions in modern building design are brought to mind by a glance through the old text books, where illustrations show materials used with a freedom, expansive and unfettered, that is typical of the 'good old' building days. A case in point is the valley in a slated or tiled roof, for which the old text books give lead some 2 ft. wide, dressed over tilting fillets. Present restrictions would make an architect think twice about using so much lead, in low-cost housing at any rate, even if he felt he could afford the expense of a roof so designed that a valley was necessary.

The difficulty has been overcome by the Marley Tile Company, Ltd., who a year or two ago brought out a concrete trough valley tile which does away with the need for lead and can be used with either tiling or slating. The tile is in the shape of a trough with the sides sloping up from the centre to the edges, where a raised rib acts in the same way as a welt or tilting fillet in a



The Asro Compensator Latch. A. Normal position. B. Door shrunk. C. Door dropped. D. Door warped.

metal valley, and contains any water that may percolate through the bedding by capillary action. There is, of course, the problem of arranging for the edges of the adjoining tiles or slates to be at least level with the top of the ribs on the valley tile, but Messrs. Marley realize that in these days of timber shortage roofs are not likely to be counter-battened, which would get over the trouble nicely, and they suggest compromise solutions which spread the rising in the level of the tiling over a fairly wide area.

A point about the Marley valley tile is that as it is made of concrete there is no fear of damaging action by the cement used in the bedding material, as there would be if the cement came in contact with lead.

Laced or swept valleys can look very charming, but they are not the least expensive forms of covering a roof intersection, and it is useful to know of something that does the job comparatively cheaply.

The address of the Marley Tile Company is London Road, Riverhead, Sevenoaks, Kent.

Asro Compensator Latch. For several years past, exhibitions of building materials have displayed some new lock, either burglar-resisting, openable with one hand, requiring only one key to open all the locks in the building, or having some other advantages, but not much has been done to get rid of that most annoying noise—door rattle. Attempts have certainly been made, but as they have had little publicity it is to be assumed that the problem has not been solved satisfactorily. It may well be that when first hung a door behaves itself and obeys the injunction to be seen and not heard, but later on the door may shrink, twist or drop; it has to be pushed hard to make the bolt shoot, or else the householder has to file the receiver-plate, and a loose fit leads to rattle. The same tendency is present in latches, as distinct from locks ; our old friend the Bales latch works well when all is well, but unless its bullet head hits the receiver fairly and squarely it does not function as it should; in any case, it makes a loud clicking noise.

There has recently come on the market a latch which, the makers claim, is rattle-proof as the result of forming the metal latch-plate with a recess of a special shape, somewhat like a V. When the door fits well the latch does not protrude to its full extent and presses against the side of the latch-plate recess in such a way that the door is forced against the stop; if the door shrinks, the action is the same because the springs of the latch push it farther out; if the door twists, the latch still presses against the inclined side of the latch recess, but at a different angle; if the door drops, the action is not affected, as the height of the receiver-recess is much more than the height of the latch and so can deal with any up or down movement. These varieties of position are indicated in the accompanying diagrams, which show that the door is always being forced against the stop, and the adjustment of the latch to altering conditions is automatic. The body of the latch is accommodated by a hole in the door 2 in. long and $\frac{7}{8}$ in. diameter.

The JOURNAL has experimented with the latch, and so far it has borne out the claims made for it, and it is not surprising to read that some corporations are using it in their building programmes. The latch is called the Asro 'Compensator' pull-push latch, and is marketed by Messrs. Ash and Rogers, of Bentley Lane, Walsall.

Termites. Inhabitants of Great Britain are inclined to read about the destructive habits of termites with the detachment given to calamities that are not likely to affect the reader, but such complacency may be a little shaken by learning that 'even Great Britain is within the climatic distribution limits of some species'. Complacency returns, however, on reading that 'it is not to be inferred that they are likely to become established in this country. There have been occasional accidental introductions but these have died out.'

These quotations are taken from the Forest Products Research Bulletin No. 24, *The protection of buildings and timber against termites*, which should be read by every architect who has to do with building in the tropics and sub-tropics. The bulletin says that termites, popularly but erroneously known as 'white ants', are social insects, and although the author had a different reason for using that adjective, it appears that they are indeed social in the sense that they are liable to drop in on you uninvited and almost literally eat you out of house and home. There are two groups of termites, the earth-dwellers, which maintain direct contact with the ground, and the wood-dwellers, which live completely isolated from the ground, and as the two groups enter buildings in different ways their habits must be fully understood before constructional or remedial work is put in hand.

Termites live principally on cellulose, which they get from wood or from articles containing cellulose. When searching for their food the subterranean kind of earth-dwellers build earthen tunnels to keep them in contact with their nest, and they will build these tunnels over unpalatable material in order to gain access to floor structures that are near the ground, but they can not easily get round knife-edge corners. The wood-dwellers, who live on dry wood will, when swarming, fly straight into a building and work their way through joints and cracks in skirtings, panelling, frames and rafters, and therefore physical barriers below the building are of no use against them.

Precautions against the attack of the earth-dwellers include projecting metal or concrete sharp-edged barriers round plinths, walls or piers, but this is not sufficient protection against the kind of termites that build mounds, which they may do under a building and so reach timber in suspended floors. Therefore means should be provided for frequent inspection of such danger spots.

The dry-wood termites can not be prevented from entry by any particular methods of construction, since they can fly when swarming, and the best course is to use only resistant or treated wood. An obvious precaution, of course, is to put screens of mosquito netting over windows and ventilators.

The bulletin gives illustrations of constructional features that should be used, while photographs show examples of inferior workmanship in brickwork and concrete that may make it easy for the termites to get at the wood they need for food. The chapter on the life history and habits of termites makes interesting reading, whether or not the reader lives in regions where attack is likely. The bulletin is published by H.M. Stationery Office, price 1s. 9d. net, and the code number is 47-68-24.

British Standards recently published. B.S. 1706 : 1951. *Electro-plated coatings of cadmium and zinc on iron and steel.* This British Standard covers electro-plated coatings of cadmium and zinc for protective purposes on fabricated articles of iron and steel, but it does not cover coatings on sheet, strip or wire. Price 2*s.* 6*d.* net, post free.

B.S. 743 : 1951. *Materials for damp-proof courses.* Materials dealt with are lead, copper, bitumen, mastic asphalt, slates, bricks, and cement and sand for mortar. Appendices give methods for determining the water absorption of slates and bricks, and notes on the selection and laying of damp-proof courses. There are also notes on individual types of courses. The Foreword states that the importance of correct laying is emphasized since the efficiency of the d.p.c. depends as much on the method of use and workmanship employed as on the intrinsic quality of the materials. In particular, the composition of the mortar, and the workmanship used for bedding bricks and slates, are of great importance when laying a d.p.c. near ground level. Price 2*s.* 6*d.* net.

Book Reviews

Town and Country Planning Textbook. Edited by the *Association for Planning and Regional Reconstruction*. [Arts. by Mark Abrams and others.] 8½ in. xx+613 pp. incl. pls. text illus. Architl. Press. 1950. £2 2*s*.

According to the dictionary a text-book may be either a standard work for the study of a subject, or a manual of instruction. There is a judicious distinction between the two definitions, and the A.P.R.R.'s *Textbook* seems to qualify under the first rather better than under the second.

It is a long book—of 6 sections, 29 chapters and over 600 pages—and covers at least a very large portion of a subject to which almost anything that happens on land can be claimed to be relevant.

Broadly speaking, the book falls into three main divisions. It contains first of all a series of essays by experts, who between them describe the general setting in which planning operates in this country: the setting of climate, resources, regions, social life, local government and legislation, including planning and legislative history. Secondly, it describes the circumstances and principles which govern the provision of the main facilities and services, such as roads and railways and public utilities. Thirdly, it lists the various possible planning surveys, suggests how some of them should be carried out, and considers the preparation of planning maps and development programmes and the use of air photographs.

These things, to which should be added a good bibliography, make it certain that the *Textbook* will be a most valuable reference book. Brought together in one book, they are so useful that it seems ungrateful to have hoped for more and to be disappointed. Yet one is disappointed: for at least two reasons.

The editors of a text-book covering so huge a field should, one feels, have taken pains to exclude everything which was not closely relevant to 'the main principles of practice and theory' mentioned in the Preface. This has hardly been done. For example, the historical review is rather a potted history of civilization than a planning history; the description of the sales methods of undertakers would hardly be out of place in Evelyn Waugh's satire *The Loved One*; and the details of how to set out railways seem more than is needed in a book of this kind. In fact, some firm cutting would have been an improvement.

In the second place—and this in the reviewer's opinion is the main fault—no guidance is given on selection: on the things that are likely to matter most.

The facts which should be foremost in the planner's mind when starting to prepare a plan are that there will be firm limits to the resources available for survey, analysis and plan-making; and equally rigid limits to the amount of information which can be properly used by the Planning Authority both in decisions about the Development Plan and afterwards. Of 50 possible surveys, four or six are likely to be essential in all towns, and another two or three very valuable in the special circumstances of a particular town. To do more may exercise the planners, but do nothing to improve the plan. It is usually not difficult to see the things that matter most: the difficulty lies in seeing that they are provided for in the plan and carried out.

A student reading the *Textbook* might be pardoned for thinking that all the studies listed in Chapter VII (or at least 22 of them) are essential and that none is more essential than the others. One would have liked to read a short and prominent declaration that surveys should be to the planner what food is to the athlete. He should have just enough and of the right kind to keep him at the top of his form. Too much or too elaborate a fare will cloud him mentally and hamper him physically. He may even end, as athletes have been known to end, in being far more interested in food than in athletics.

H. MYLES WRIGHT [*A*]

Richard Neutra. Buildings and projects, *&c*., by *W. Boesiger*. 9¼ in. × 11¼ in. 239 pp. incl. pls. text illus. Zürich: Girsberger. 1951. £3 3*s*.

On first glancing through this book, the reader might be forgiven if he regarded it as another example of modern exhibitionism and put it down with a gesture of despair. Here is Neutra photographed talking to students in all parts of the world from Tokio to Venice, and here is photography of his work so seductive in itself that it could hold its own as a book of photographs. Penetrating beneath these shock tactics, the reader would then discover an immensely wide range of work that appeared at first sight to contain every modern cliché. It would, however, be wise to remove these coverings, and, like Tolstoy with his outer wrappings or Eric Newton with the outer skin of his onion, reveal to himself the true work of one of the great artists of the present day.

It is of absorbing interest to try and understand what it is that lifts such a man out of the common run of architects, so that he bestrides the world like a colossus. Certainly there are a number of breath-taking views of architecture and landscape, but individually most of the work illustrated is not outstandingly better or more original than would be expected from any good office interested in modern design; some of it seems even dull and the kind of work shown every day in the journals. It seems to the reviewer that the secret of Neutra's spell lies in the fact that we, the other architects, know that he has resolved in his own mind and to his own satisfaction those deep philosophical problems with which we are always wrestling (or, if we are not, with which we ought to be). He may be immature but, as in the work of Leonardo da Vinci, it is what his work implies rather than what it is that makes it significant. He tells us, in fact, that no matter how efficient may be the scientist (and he as a scientist is efficient indeed), it is the artist standing apart and as it were on another plane that truly resolves the apparently conflicting objectives of nature and of the mind of man. Some of us might even feel that the mind, having created the machine, places less value than before on the human body as a means of expressing its will, and no longer desires its works to be based on human proportions. This tremendous thought would be unbearable were it not for the Neutras of this world, who open the door just a crack on an altogether new scene.

G. A. JELLICOE [*F*]

Die Plastizitätstheorie im Stahlbetonbau [theory of plasticity in reinforced concrete], *&c*., by *Franz Gebauer*. 9¼ in. viii + 184 pp. text illus. Vienna: Fromme. 1949. £1 4*s*. 6*d*.

This book deals with one problem only, namely the manner in which a reinforced concrete cross section behaves under stress. It is generally acknowledged today that the linear stress distribution assumed in our calculations is incorrect, and also that the relationship in stress between the steel and the concrete (the factor 'm') is a very doubtful basis for calculation, as it varies, not only with different qualities of concrete, but with the duration of the load.

This book sets out to explain these facts, and endeavours to provide a different set of formulæ and tables to supersede those in common use. There is no doubt that, particularly for pure bending, the formulæ given here are nearer the actual facts than those used generally; the steel stress is larger and the concrete stress is smaller than the ones given by the traditional formulæ, and this is very much in accordance with tests.

It would certainly be possible to find more simple formulæ than those given in this book and, in spite of its mention of the fact, no real answer is given to the question of variation in stress, particularly in columns, owing to the duration of loading. In some instances the book is rather theoretical and it is perhaps of more value to the scientist than to the practical engineer.

F. J. SAMUELY

Building Construction and Drawing. Part I. Elementary Course, by *George A. Mitchell* and *A. M. Mitchell*. 20th ed. by W. Hanneford-Smith. 7½ ins. 648 pp. incl. pls. + folding pl. Batsford. 1950. 10*s*. 6*d*.

The twentieth edition of this familiar text-book has a brisker appearance than its forbears. The text has been extensively overhauled to bring it into line with present codes of practice, and all the vast number of illustrations have been redrawn (and many new ones added) in a more fashionable style of draughtsmanship. At the slightly higher price of half a guinea, Mitchell, Part I, still represents good value for money and as a source of information to students has few serious rivals.

J.C.P.

Regeneration. Der Städte. Des Villes. Of Towns, by *Adolf Abel*. 9½ ins. 95 pp. text illus. Erlenbach (Zurich): Verlag für Architektur. 1950. £1 8*s*. 6*d*.

This is a book of essays on town planning. The author, a Professor of Town Planning at the University in Munich, lays his main emphasis on the idea of segregating pedestrian from vehicular traffic in order that both may develop to the full. To strengthen his argument he refers to the two traffic systems in Venice and to a number of lesser examples, where green islands for pedestrians have been isolated from the traffic stream. Le Corbusier's *ville verte* and the English precinct system may be quoted as further efforts in the same direction.

From such general premises the author develops a scheme for an ideal town based on two superimposed systems—for pedestrians and for vehicular traffic. A whole series of piazzas, squares, courts and open spaces, adorned with obelisks and arches, has been suggested to produce the desired sense of space.

The idea is applied, too, to three actual areas in Munich and Wiesbaden. The design for the centre of Munich proposes a system of five-foot walks radiating from the town centre towards the most important parts of the city. The second scheme aims to transform the former garden of the Royal Residence into a cultural centre devoted to intellectual and artistic life. The last scheme deals with the reconstruction of the destroyed spas of Wiesbaden, suggesting a promenade one storey above the streets, which would cross the dip where the springs and hotels are situated.

We owe a debt to the English translator, who has improved immeasurably on the vile German of the original.

ARTHUR KORN [*F*]

Of the Christian Altar and the Buildings which contain it, by [*Sir*] *J. Ninian Comper*. 8½ in. 71 pp. front. S.P.C.K. 1950. 5*s*.

Church Design, by *Alan G. Fudge*. 8½ in. 50 pp. incl. pl. text illus. Epworth Press. 1950. 4*s*.

These two essays approach the same subject from widely-differing standpoints, but each makes a useful contribution to the growing literature on church design and liturgical arrangement; neither is an authoritative pronouncement of the communion to which its author belongs (Anglican and Methodist).

The work by Sir Ninian Comper, embodying much that appeared in his paper to the Ecclesiological Society in 1932 (*Transactions*, St. Paul's E.S., vol. x, pt. 2, pubd. 1933), approaches the subject, as might be expected, from the Catholic and sacramental viewpoint. After a discourse on beauty in worship and its relation to costliness, he traces the history of various settings and features from primitive times to the present; these are often of practical value to the architect, e.g., the chapters on the Plan of a church in relation to the altar and the Approach to a church. Then follow sections on various details: cancelli (screens), the ciborium (i.e., baldachino or canopy), veils and frontals, reservation, lights, flowers, imagery and bells; he concludes with a survey of changes in altar design and an emphasis on primitive practice. The implied practical advice has, admittedly, to be disentangled from the detailed historical information.

The rather slighter essay by Mr. Fudge [*A*] is much more concerned with the equally necessary material conditions of worship. It also unexpectedly deals, like the Baptist Union's *The Building of Baptist Churches and Sunday Schools*, with adjoining buildings for the Sunday instruction and weekday cultural activity which are increasingly part of the churches' work; thus there are chapters on Sunday schools and classes and 'recreation' of various kinds. For church design pure and simple the most important chapter is 2, Planning for Worship, with special regard to usual Free Church practice (he calls it by the old and negative name 'Nonconformist'); there are 'brass-tack' paragraphs on Floor Area, Passageways, Seating, Vestries, Altar and communion rail, Pulpit, and Narthex. Wider problems are briefly faced under Planning against noise and Planning for good acoustics, with a diagram. There are line-drawings, including chancel and platform plans and a class-rooms-and-corridor plan.

It will be seen that the two booklets under review, though superficially dissimilar, are really mutually complementary, and each is written, one ostensibly and the other by implication, from a sincere devotional motive.

H. V. M. R.

Reserve of Officers

Architects who were officers in the British or Indian Armies may wish to know what means there are for making themselves available for war service and for keeping in touch with modern developments.

The following is a brief summary of possible opportunities of service, but those wishing to have full details should apply to Colonel I. G. Loch, O.B.E., The War Office, A.G.7, Stanmore, Middlesex.

THE SUPPLEMENTARY RESERVE OF OFFICERS, for those unable to join the Territorial Army. The only training commitment is 15 days' continuous training each year. A candidate must be over 18½ years of age and, normally, under 40; must have served (*a*) as an officer on full pay in the British or Indian Armies, or the Armed Forces of a Commonwealth country or Colony; (*b*) in the ranks of the S.R. or T.A.; be recommended by the C.O. of his S.R. or T.A. unit, and, if under 26 years old, have completed 15 days' training at an Officer Cadet School ; or (*c*) be specially invited by the War Office to apply for a commission, because of special qualifications.

Rank on appointment will normally be Second Lieutenant, but Lieutenant in the R.A.M.C. and R.A.D.C.

The S.R. is divided into two categories, S.R. I and S.R. II, according to the degree of liability for service.

All officers are liable (*a*) to be called out for service in the United Kingdom in defence of the United Kingdom, and to serve in any unit of the Land Forces anywhere in the United Kingdom ; (*b*) to be called out on service in any unit or part of the Land Forces in any part of the world, when the Army Reserve or any part of it is called out by proclamation.

The age limits for removal from the S.R. are roughly 45 to 50 for Majors and under, and 48 to 55 for Lieutenant-Colonels.

TERRITORIAL ARMY. Officers retired or released from the British or Indian Armies are invited to join the Territorial Army.

The T.A. Reserve of Officers is the special reserve for the T.A., restricted to those who have held T.A. commissions.

REGULAR ARMY RESERVE OF OFFICERS (R.A.R.O.) and ARMY OFFICERS EMERGENCY RESERVE (A.O.E.R.). These two Reserves are open to recruitment from (*a*) ex-officers of the pre-war Regular Army who resigned with less than 10 year's service ; (*b*) released emergency commissioned officers ; (*c*) ex-officers who have relinquished short service commissions since the end of hostilities ; (*d*) retired and released officers formerly of the Indian Army.

The R.A.R.O. is designed to bring the active army up to strength, to raise units from lower to higher establishments, and to provide a reserve of officers for reinforcement purposes. Members are liable to be called to army service by proclamation at a time of actual or imminent national emergency.

Those eligible with the necessary qualifications for R.E. are officers who have not passed the following ages for their substantive rank on release. These ages are subject to slight alteration for other arms of the service :

2/Lt.	.. ..	30 yrs.
Lt. ..	.. ..	30 yrs.
Capt.	.. ..	45 yrs.
Maj.	.. ..	45 yrs.
Lt.-Col.	.. ..	50 yrs.
Q.M.	.. ..	50 yrs.

The A.O.E.R. is a register of those who volunteer to serve as officers in any future war, not being more than 55 years old.

The Registered Reservist Scheme provides a means whereby the released officer can affiliate himself to a local T.A. unit of Anti-Aircraft Command for immediate service with that unit, in the event of emergency.

Review of Films—23

The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 mm. and 16 mm.) are given. Sound films are marked 'sd', and silent 'st'. The running time is given in minutes.
(F) indicates free distribution.
(H) indicates that a hiring fee is payable.

Foamed Slag Concrete
Britain 1949 (*F*)

Summary. The development of a useful building material from a waste product. Composition and properties of foamed slag; its commercial manufacture to a specified standard; laboratory tests; two methods of 'foaming' slag; waterproof, load bearing and fire resistance tests; the use of different sized blocks of foamed slag concrete and their effect on building operations, examples of housing built using this material. Recapitulation.

Appraisal. An up-to-date technical film of high quality. The photography is good but the music at the beginning and end of the film is irritating and could well be omitted in a film of this kind. It would have made for clarity if the different processes of manufacture could have been sub-divided under headings: at certain points methods of using the material are interposed between shots of the manufacturing processes; no mention is made of damp-proof courses; some comparative building costs would have been helpful. The laboratory shots add little to the technical value of the film.

16 sd. 33 minutes. The Director, Building Research Station, Garston, Watford, Herts.

The Reema System of Building

Britain 1950 (*F*)

Summary. A description of the Reema system of building. The employment of large precast units for maximum economy of labour; the advantages of flexibility of design, great strength and the independence of weather conditions; the factory production of component parts and their assembly on the site; different types of roofing and external finish to give variety; comparison between the time taken to erect a Reema house and a traditionally built house of the same size.

Appraisal. A straightforward and reasonably competent film giving a general idea of this system of building. Although factory and site construction are well shown, the principles underlying the actual method of construction are not very clearly stated. It would have added to the film's value for technical audiences if, in addition to emphasizing the great strength of the structure and the sound insulation of party walls, other functional requirements such as durability, thermal properties and damp exclusion had been mentioned. A comparison of costs with traditional forms of house building would also have been of value. The lighting of the factory shots was poor, and in the copy seen the chart of comparative times of erection was scarcely legible. Some sequences were too short and disjointed. No plan was shown, nor were there any interior views of the finished house.

16 sd. 18 minutes. Reema Construction Ltd., Milford Manor, Salisbury.

Correspondence

THE GOTHIC WORLD

Sir,—May I return Dr. Pevsner's compliment by indulging an author's 'irrepressible desire to argue' with his reviewer?

I am very far from denying the importance of certain German artists of the later thirteenth century; on the contrary, I emphasized this strongly (pp. 89–90). But they did not until about 1300 constitute 'flourishing indigenous schools' in any way comparable with those of France and England. The distribution of square east ends (apart from those of the Cistercian churches themselves) seems quite incompatible with a general Cistercian origin. Whereas the order spread throughout Europe and was especially concentrated in France, non-monastic square east ends are practically absent from France, while normal in the British Isles and upper Baltic region. By 'pure Gothic' I mean not any specific local manifestation such as that of Wells or Bourges, but the entire rejection of the classical and Romanesque elements which before their building (c. 1175–1190) hung around the emergent style.

While the occasional use of an ogee curve may be accounted for in other ways, the sudden flowering of an ogee 'style' in England after 1290 does seem to be connected with Persian contacts and observation of Eastern imports. As to the origins of Gothic, it is not my suggestion that the Normans brought home a ready-made Islamic style; nor do I deny that the phase of development 'from St. Denis to Beauvais' was mainly (if not wholly) French. But this development rested upon an earlier phase of change which derived its symbolic impulse from the East, and its constructive ability from Norman experiment, mainly conducted in England.—Yours faithfully,

JOHN H. HARVEY

MODULAR CO-ORDINATION

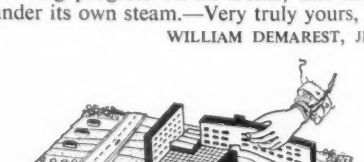
Sir,—I noted in the December 1950 issue of the Royal Institute of British Architects JOURNAL, reporting on a general meeting of the R.I.B.A. where the reports of the Anglo-American Productivity Building Team were discussed, that Mr. Robert H. Matthew gave the meeting to understand that 'unfortunately A-62 has suffered a hiatus. . . .'

It is true that something of a hiatus did occur, largely because those supporting this work (the heirs of the originator in America of the principles of Modular Co-ordination) could no longer carry its costs. However, as Mr. Matthew noted, 'the general effect on the industry had already been felt,' and a number of organizations have volunteered to contribute to the furtherance of the overall programme to continue the development of Modular Co-ordination and accelerate its general adoption by the American building industry. One immediate result of this was the creation, as a part of the A.I.A's. national headquarters in Washington, of an Office for Modular Co-ordination, with myself as A.I.A. Secretary for Modular Co-ordination. The activities of this office are many, but the primary effort is to bring American architects around to making use of this method in the preparation of working drawings and details.

In the Housing Act of 1948 and subsequent amendments, the Congress directed the Federal Housing and Home Finance Agency to explore and develop the potentialities of Modular Co-ordination for the more efficient and economical construction of houses and multi-family housing—the particular field of the H. & H.F.A. Their activities in this direction, plus the work of the A.I.A. Modular office, plus the enthusiastic participation of a growing number of individuals and organizations who have come to see what Modular Co-ordination has to offer—all these have resulted in a number of indications that the usual method of dimensioning buildings and fixing product sizes in this country will be, before many years, by the Modular Co-ordination method. The National Association of Home Builders, the large organization of speculative builders, has joined the sponsors of American Standards Association Project A-62 for Modular Co-ordination. Two new Modular Standards are nearly ready for A.S.A. approval. The largest organization of general contractors, the Associated General Contractors of America, endorses the use of the system. Two of the three major architectural periodicals are aggressively urging a general conversion to Modular Co-ordination. Schools of architecture will have in hand, commencing next fall, material needed for teaching the method to architectural students. And so on.

Mr. Matthew was right; there was a hiatus. But even this served a purpose. It proved that the baby need not rely on charity. It didn't die, and apparently didn't even lose ground. So many practical people were already convinced of the validity of this method that it is once again showing progress on all fronts, this time under its own steam.—Very truly yours,

WILLIAM DEMAREST, JR.



Obituaries

Herbert Tudor Buckland, [*F*]. We record with regret the death of Herbert Tudor Buckland, Vice-President of the Institute from 1923 to 1925. He died on 18 January last, aged 81. Besides being a past Vice-President of the Institute, Mr. Buckland was the first Chairman of the Allied Societies Conference (1922-25), President of the Birmingham Architectural Association (1919-22), Architect to the Birmingham Education Committee (1902-34), and a Founder Member of the Birmingham Civic Society. He also served for many years on the Council of the Institute (1919-31 and 1932-38) and on a number of Committees, including Conditions of Contract, New Building, Practice, Art, Science, Royal Gold Medal, Charter and Bye-laws, Official Architecture and Professional Conduct; and was an Advisory Member of the Board of Architectural Education.

Among his principal works during the fifty-six years of his practice as an architect and surveyor were a large number of schools, colleges, university extensions, mansions, etc. He was responsible, with his partner, Mr. William Haywood [*F*], for the Royal Hospital School at Holbrook, and for recent additions to Newnham College, Cambridge; and, with Mr. Haywood-Farmer, for the George Dixon Secondary School. Other works were St. Hugh's College, Oxford, and Nobel House, Buckingham Gate.

Mr. Buckland began his architectural career by being articled to Henry Clere, and subsequently to Bateman and Bateman, both of Birmingham, and studied at the Birmingham School of Art. He was a great winner of competitions, among them that for the Women's Hall of Residence for University Students, Birmingham; the High School for Girls, Barnsley; South Moor Cottage Hospital and the Royal Naval School, Holbrook.

Buckland's work was chiefly influenced by Webb and Lutyens, and it invariably displayed both good taste and robust thought. 'Bucky', indeed, as he was affectionately known to his contemporaries, had great force of character. He might at times be thought overbearing by some, but he was also essentially fair and just.

In his middle years he became a great golfer and fisherman, and articles by him on the two sports—chiefly the latter—appeared frequently in journals such as THE FIELD and COUNTRY LIFE.

Mr. G. B. Cox [*F*], of Messrs. Harrison and Cox, Birmingham, writes:

'Herbert Buckland was first and foremost a very human and likeable personality, and those who knew him intimately were fortunate to enjoy his friendship.

'His services to the profession were freely and generously given, and in particular to the Birmingham and Five Counties Architectural Association, which he served as Honorary Secretary from 1893-98, as Vice-President from 1899-1902, and as President for the years 1919-22.

'In the early years of this century he was one of a group of Birmingham practising architects who gave their time, knowledge and personal experience, in teaching design and kindred subjects to students at the architectural classes at the Birmingham School of Art. Many of the senior architects of our city treasure and value the knowledge imparted to them by him during those early years.

'His architectural work for the Education Committee was outstanding, and a notable advance upon the contemporary school work of his period. The work comprised not only numerous elementary schools, but some twenty Secondary and Special Schools, Technical Schools and Clinics, all of which were fine examples of new development in the planning and design of school buildings.

'Herbert Buckland will be mourned by us all and his death will leave a gap in our ranks that will be hard to fill.'

Alfred Booth [*Ret. A*], Acting County Architect for the West Riding of Yorkshire until 1947, died suddenly on 18 January, aged 69.

One of the senior members of the staff of the County Architect's Department, Mr. E. J. Sutcliffe [*A*], who worked with Mr. Booth for nearly 40 years, writes:

'Mr. Alfred Booth . . . was articled in Leeds and spent the early years of the present century in this town at a time when considerable domestic work as well as new Grammar Schools were in progress in the West Riding. Thus his early experience was in domestic and educational buildings and he moved to the Northumberland County Council where he gained further experience in the educational building programme then in progress.

'In order further to widen his experience his next move was to the City Architect's Department in Sheffield and in November 1911 he was appointed to the staff of the Architect to the West Riding County Council, where his first works were a major extension to the County Hall and a new Sanatorium at Ilkley.

'During the 1914-18 war Mr. Booth joined the Artists' Rifles and after service in France was transferred to the Field Survey Section for work in connection with the preparation of war maps. Following his return to civil life his major works during the period between the two wars were new Police Divisional Headquarters and Court House at Rotherham, and a new Police Divisional Headquarters at Harrogate. During this period he also acted as Deputy County Architect, and on the death of the County Architect in July 1939 was appointed Acting County Architect.

'During the 1939-1945 war Mr. Booth was responsible for Civil Defence work comprising first-aid posts, warning sirens and equipment stores, as well as for the maintenance of County buildings; and there is no doubt that the work and responsibilities of this period, with the very depleted staff, contributed largely to the ill-health which compelled retirement from the service of the County Council in November 1947.

'Mr. Booth's interest in architecture extended far beyond his official duties and his interest in antiquarian research was considerable. For many years he spent considerable time and energy in investigating the history of abbeys, churches, mansions and bridges in the West Riding, and no appeal to him for information in these subjects (and they came from far and wide) went unanswered. Members will remember that Mr. Booth has from time to time in the past contributed articles to the JOURNAL.

'Although Mr. Booth had already left the County Service his sudden death has left a gap in the circle of those who had been privileged to know him, and his kindness and helpfulness to all with whom he came in contact will long be remembered by those who were privileged to work with him.'

Mr. Hubert Bennett [*F*], West Riding County Architect, writes:

'Although Mr. Booth reached retirement within some two years of my joining the West Riding Authority, I shall always feel privileged to have known him, especially for his kindness and his fine appreciation of architecture.

'As an architectural draughtsman and research worker he was extremely accomplished.'

William Alexander Harvey [*F*]. A friend has contributed a memoir from which the following appreciation has been extracted:

The death of W. Alexander Harvey on 6 February at the age of 76 has deprived the architectural profession of one of its most prominent members. His distinguished work was recognized not only in this country but on the Continent and in America, and his influence on the architectural movements of the last half-century has been very considerable. He was in practice in Birmingham for over 50 years, becoming a Fellow of the R.I.B.A. in 1918. He was joined in partnership in 1914 by Mr. H. Graham Wicks [*F*]. Mr. Harvey was actively connected with the work of the Institute, having been an Examiner and a member of the Council and of the Science Standing Committee. He was a Founder Member of the Town Planning Institute.

He came of a family with artistic gifts; his father was an artist in stained glass, and his brother, Ernest J. Harvey, of Harvey and Ashby, was also a designer of stained glass whose work gained a high reputation. When he left school it was intended that he should take up engraving as a profession, but he set up as an architect in Birmingham in his early twenties. In 1895 he was appointed architect to the newly established Bournville Village Trust, founded by the late Mr. George Cadbury. The appointment, while giving him the first big opportunity for the exercise of his gifts, proved to be of incalculable value to this pioneer housing experiment. Architects and others visited the village to see the beauties of the new homes—this at a time when good taste in the housing of the people was at its lowest ebb.

In 1904 Mr. Harvey read a paper on the subject of 'Cottage Homes' to the Architectural Association and later he treated the subject more comprehensively in his book: *The Model Village and its Cottages* (Batsford). In this book appeared examples of his work which showed the variety of his designs, and it can be said that many of them proved to be prototypes of design in housing developments of the period.

The church architecture, schools and other public buildings by Mr. Harvey illustrate the variety of architectural styles in which he expressed his genius, though not as a copyist, for his aims were consciously to give a new individuality of spirit to old forms. He had early scope in this field as Bournville grew, and among the buildings erected to his design were Ruskin Hall, now a Branch Art School of Birmingham, and the Elementary Schools erected in 1905. The original tower of this building was adapted at a later date to carry the belfry of the Bournville carillon, which is in the form of an open cupola. Another work was his little Meeting House for the Society of Friends, a very interesting early experiment with its *motifs* of traditional English styles brought into a satisfactory unity. These buildings are grouped round one of the most charming of English village greens, the layout of which reveals the care and skill devoted to it.

Of special importance, perhaps, in his architectural progress was the Anglican church erected at Bournville in 1925 from designs made by him many years earlier and carried out by Messrs. Harvey and Wicks. It was his first contribution to the movement in ecclesiastical architecture, dating broadly from the turn of the century, when a few—chiefly of the younger architects—shunning the church-building of the Victorian period with its sham Gothic raiment, sought to create something which was honest and alive. This church, in the Early Christian basilican style, was the first example of the new phase in Mr. Harvey's development, for other buildings followed embodying this spirit in original or traditional styles. Many comments

have been made on this early church—on its fine proportions and its compact unity, for it consists of the church, a chapel and a church hall, to which it is linked by an arched cloister.

The church of Immanuel at Highters Heath, Birmingham, in Lombardic character, is a valuable example of what has been done by Messrs. Harvey and Wicks with an interior without the extensive use of stone, and the cemetery chapel at Solihull is a particularly impressive building worthy of its purpose.

In 1904 Mr. Harvey left Bournville to establish his practice in Birmingham, though for many years he continued to act as consultant to the Bournville Village Trust.

Among other housing schemes with which he was associated were those at West Bromwich and Kettering (Harvey and Wicks) at Oldham (with the late Joseph Crouch of Crouch, Butler and Savage), at Newburn-on-Tyne and at Widnes (Harvey and Wicks and Adshead and Ramsey); at Bromsgrove for the Bromsgrove Rural District Council, and developments for the Calthorpe Estate at Edgbaston. His domestic work in many parts of the country has been very considerable.

First among his public buildings must be mentioned the Town Hall and Municipal Offices at Dudley (Harvey and Wicks), a work which attracted wide attention. For this work his firm, in 1934, were awarded the Bronze Medal of the R.I.B.A. The most striking feature of the buildings from the main approach is the war memorial with its clock tower in brick (to which a superstructure was planned). Over the entrance to this tower is a memorial inscription, cut in stone and containing lines specially written for it by Thomas Hardy. The town hall and the war memorial are linked to municipal offices which existed previously and were Victorian Gothic and Tudor in style, and the style of the new buildings was dictated to some extent by the desire of the Dudley Council that they should harmonize.

An outstanding work is the church of St. Francis at Friar Park, West Bromwich, which Messrs. Harvey and Wicks completed just before the last war. This church may be less visited than some contemporary churches of repute by reason of its remoteness from any town centre. It is in the form again of an Early Christian basilica, though it is freer from traditional elements of the basilican styles, and embodies much that is original in conception. The exterior reveals at once a cohesion of plan, a fine grouping of the masses of which it is constituted, and right scale. The tower, which crowns the east end, is a feature of dignity and beauty and is surmounted by a finely carved figure of St. Francis, in teak, gilded. The church throughout conveys the impression of a perfectly fulfilled conception, and all its parts are gathered together into a harmonious whole with great skill and sensitiveness.

Among Mr. Harvey's other public buildings are the Tamworth War Memorial Hospital, the Deaf and Dumb Association headquarters in Birmingham; schools for the Birmingham Education Committee; various barracks and buildings for the War Office; a number of banks, old people's dwellings and infant welfare centres. Messrs. Harvey and Wicks were appointed by the Oldbury Council to prepare plans for their proposed civic centre and municipal offices, and they were the winners in competition in 1939 for the scheme for the Bedford town hall, the building of which has been postponed.

Important examples of Mr. Harvey's work in another field were the West Hill, Kingsmead and Carey Hall Training Colleges at Griffins Hill, Selly Oak, with their comprehensive accommodation of lecture rooms and common rooms and hostels for students.

Mr. Harvey carried out several reconstructions and restorations of importance, the chief being the removal of Selly Manor to the village green at Bournville, a mile distant. The old manor, which had long fallen into decay and was due for demolition, was removed piecemeal, and through his care and skill a notable 14th century relic has been preserved for posterity in its original beauty. Mr. Harvey was also responsible for transferring to Bournville and re-constructing another historic house from Minworth Greaves, some miles east of Birmingham. The restoration of the old Tudor Grimshaw Hall at Knowle in Warwickshire was another example of tactful work in this field, and the alterations to Edgbaston Hall, a Queen Anne building, still another.

Mr. Harvey was President of the Birmingham Architecturai Association from 1917-1919. He received the R.I.B.A. Distinction in Town Planning in 1936. In addition he was a member of the Birmingham Advisory Art Committee, a Fellow of the Royal Society of Arts and Vice-President of the Royal Society of Artists. He was also a Member of the Committee of the Botanical and Horticultural Society of Birmingham.

Mr. Harvey loved foreign travel and his visits to the cities of France, Italy, Spain, America and other countries were a rich source of inspiration to him. He was rarely without his sketch book, either abroad or at home, and his drawings and facile notes with the pencil and colours reveal his quick response to beauty and the sureness of his observation.

His courage, his integrity, and the charm of his personality won for him the respect and love of innumerable friends.

Leonard William Barnard [*F*]. The death has been announced of Leonard William Barnard [*F*], who was in practice in Cheltenham (Leonard W. Barnard and Partners).

Mr. Barnard died on 18 January, at the age of 81. He received his architectural training in Cheltenham, with the firm of Middleton, Prothero and Phillot, and the cloisters at Cheltenham College were his work, as was the chapel of Dean Close School. Other works were the Church of All Saints, Oystermouth, Grantham School (built 1937) and the restoration of Wrexham Parish Church; and, overseas, Umtata Cathedral in the Cape, and the British Merchant Seamen's Hospital at Marseilles.

Mr. Barnard was the author of two books, both privately printed; *Cheltenham Masonic Hall, its Building and History* (1932) and *Ninety Years Past; The History of the Firm of L. W. Barnard and Partners* (1949). His partner, Lt.-Col. G. H. Ryland [*F*] at 13 Imperial Square, Cheltenham, and his former partner, Lt.-Col. Eric Cole [*F*] (Eric Cole and Partners) of Dyer Street House, Cirencester, Glos., will carry on Mr. Barnard's practice.

Dr. Heinrich Tessenow, H.C.M. We have been informed of the death on 1 November last of Dr. Heinrich Tessenow, H.C.M. in Germany since 1937, at his home in Zehlendorf, Berlin. He was aged 74.

Dr. Tessenow was a Member of the Bavarian Academy of Fine Arts, an Honorary Member of the German Architects and Engineers' Society and of the Senate of the Technical University, Berlin. He was a Doctor of Philosophy of the University of Rostock and a Doctor of Engineering of the Technical High School, Stuttgart. Among the posts which he had held were those of Head of the Architecture Department of the Academy of Fine Arts, first in Dresden and then in Berlin; and *Ordinarius* in Design of Building at the Technical High School, Berlin.

Dr. Tessenow was known as a specialist in garden city designing. He was the chief collaborator on the Garden City of Hellerau, near Dresden. He was also designer for the International Art Exhibition on the occasion of the Olympic Games in Berlin in 1936 and for the International Art Exhibition in Dresden in 1924. Other works were the Schinkel-Wache in Berlin, the railway bridge over the Elbe at Meissen, the Educational Institute at Hellerau, the Realschule at Kassel, a school at Klotzsche, Dresden, a number of houses—especially small houses and workers' dwellings—and a quantity of furniture.

Dr. Tessenow's published works comprise: *The Work of the Carpenter* and *Dwelling Houses* (both published by Callwey, Munich); *Houses and Similar Buildings* and *Crafts and the Small Town* (Cassirer, Berlin); and *The Country In Our Midst* (*Land in der Mitte*) (Hegener, Hellerue, Dresden).

W. Gordon Sellers [*A*]. We regret to announce the death on 20 February of Mr. W. G. Sellers at the early age of 27. After taking his degree at Liverpool University, Mr. Sellers went to the Ministry of Works as an Architectural Assistant, and worked on the design for the Department of Atomic Energy at Risley, Lancashire.

Arthur George Oxland [*L*] died on 10 November 1950 at the age of 52. He had been for 22 years Architect, Surveyor and Sanitary Inspector to South Molton R.D.C. In this capacity he was responsible for a number of local authority housing schemes and sewage schemes. He leaves a widow and two sons.

Edward Ernest Barks [*Ret. A*] died on 17 February, aged 77. Mr. Barks was educated at the City of London School, articled to Mr. Norman Shaw, and continued his architectural education at the R.A. Schools. He was subsequently attached to the Architectural Department of the Great Northern Railway, and was then for 35 years—until reaching retirement age—with the London County Council; while there he did work in connection with several housing estates, schools, hospitals and nurses' homes.

William Dootson [*L*] died on 12 February at Stockport, aged 75 years. Mr. Dootson, who up to his fatal illness was in practice in Manchester, was trained at Melbourne (Australia), Blackpool and Manchester. He was one of the country's first specialists in store planning and design, and carried out many schemes for several of the large multiple store companies in all parts of Great Britain. The premises of the Saxone Shoe Company Limited in Anne Street, Belfast and Market Street, Manchester, were also among his works. During the war years Mr. Dootson acted as Technical Assessor for the War Damage Commission. He was a Fellow of the Manchester Society of Architects.

Mr. Dootson's practice is being allowed to lapse, but outstanding commissions are being completed by his eldest son, Mr. Will Dootson [*L*], at 4 Duart Crescent, Prestwick, Ayrshire.

Henry Houghton Hill [*A*], eminent Cork architect, died after a brief illness on 9 February, at the age of 69 years. Mr. Hill inherited a long family tradition of architecture in Cork—his grandfather first started the family practice 120 years ago; and during that 120 years many outstanding Cork buildings and many churches throughout the county of Cork were designed by the Hills. The late Mr. Hill himself was responsible for the Head Office of the Munster and Leinster Bank, the Dairy Science Department of University College, the Municipal Schools of Commerce and Domestic Science, and Messrs. Cash and Company's stores in Patrick Street.

Mr. Hill was educated at the Merchant Taylors' School, Crosby, and at Liverpool

University School of Architecture. He won the R.I.B.A. Silver Medal in 1909 for his essay on *The Influence on Architecture of Modern Methods of Construction*, and was a member of the Council of the Royal Institute of the Architects of Ireland and a past member of the R.I.B.A. Council. He was also an Associate of the Royal Hibernian Academy. Like his father before him, Mr. Hill was lecturer in architecture at University College, Cork.

His practice is for the present being managed by his chief assistant, Mr. Desmond V. Stevenson, pending arrangements which the executors hope to conclude for its disposal.

John Carrick Stuart Soutar [*F*] died on 27 February, aged 70. Mr. Soutar was a specialist in town planning, and was awarded the R.I.B.A. Distinction in that subject. He was a past member of the R.I.B.A. Council and the Practice Standing Committee.

Mr. Soutar received his architectural training at Dundee University, where he gained a number of prizes, and was subsequently articled to Mr. T. M. Cappon [*F*]. He started in personal practice in 1912. He later became architect to Hampstead Garden Suburb Trust Ltd. and joint architect to Ruislip Manor Ltd. and Knebworth Estates. He was responsible for Ruislip-Northwood Town Planning Scheme No. 1, for Hampstead Garden Suburb (in succession to Sir Raymond Unwin), for the Knebworth Estate, and a plan for Merstham Estate (since abandoned). Individual buildings for which he was responsible include several large blocks of flats, houses, offices, showrooms, workshops, garages and preparatory schools.

Edward Stanley Clarkson [*Ret. F*] died on 13 October 1950 at the age of 84. Mr. Clarkson had practised for many years in Gray's Inn and in Buckingham Street, London. His best known work was probably the rebuilding, in partnership with Mr. T. P. Clarkson and Mr. H. Austen Hall [*F*], of Messrs. Peter Robinson's, in Oxford Circus, in 1923. He also designed and built a factory for the United Match Industries Ltd., at Bishop's Stortford, Herts. He served on the War Damage Commission from 1941 to 1950.

William Kerr [*Ret. L*] died on 11 December 1950, at the age of 70, after five years' retirement. He had been for 25 years with the Glasgow Corporation; for several years as Deputy Chief Architect of Glasgow Housing Department.

We regret to record the death of **Ahangama Baduge Mendis** [*F*] of Colombo, Ceylon. Mr. Mendis died on 7 July 1949, aged 57 years.

Notes and Notices

NOTICES

The One Hundred and Thirteenth Annual General Meeting, Tuesday 1 May 1951 at 6 p.m.
The One Hundred and Thirteenth Annual General Meeting will be held on Tuesday 1 May 1951 at 6 p.m. for the following purposes:

To read the Minutes of the Seventh General Meeting held on 3 April 1951; formally to admit new members attending for the first time since their election.

To receive the Annual Report of the Council and Committees for the official year 1950-51. (Copies of the Annual Report were sent to members on 17 April.)

(*NOTE.*—It will facilitate answers to questions if members will give the Secretary prior notice of any questions which they may wish to ask. Notices should be in the Secretary's hands not later than 25 April. This will not preclude the right of members to ask questions on the Annual Report without having given prior notice.)

To nominate candidates (two members) for the office of Hon. Auditors for the ensuing year.

To receive the list of attendances at the Council during the Session.

(Light refreshments will be provided before the meeting.)

Session 1950-51. Minutes VIII
At the Seventh General Meeting of the Session 1950-51, held on Tuesday, 3 April 1951 at 6 p.m.

Mr. A. Graham Henderson, A.R.S.A., President, in the Chair.

The Meeting was attended by about 130 members and guests.

The Minutes of the Sixth General Meeting held on 20 February 1951 having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The President delivered an address on the presentation of the Royal Gold Medal 1951 to Mr. E. Vincent Harris, O.B.E., R.A. [*F*], and called upon Sir Gerald Kelly [*Hon. F*], President of the Royal Academy, Dr. John Murray, M.A., Principal of the University College of the South-West of England, Sir Basil Gibson, C.B.E., J.P., Mr. Robert Lyne (Lord Mayor-elect of Bristol), and Sir Percy Thomas, O.B.E., Hon. LL.D., D.L., J.P., M.T.P.I. (Past President), to speak on the work of Mr. E. Vincent Harris.

The President then asked Sir Percy Thomas and Mr. Edward Maufe, R.A., M.A., Hon. LL.D. (two Royal Gold Medallists) to escort Mr. E. Vincent Harris to the platform.

Having been invested with the Medal, Mr. Harris expressed his thanks for the honour conferred upon him.

The proceedings closed at 7 p.m.

Session 1950-51. Minutes IX
At a Special General Meeting held on Tuesday 3 April 1951 at 7 p.m.

Mr. A. Graham Henderson, A.R.S.A., President, in the Chair.

The Meeting was attended by 45 members.

The President announced that the Special General Meeting had been called for the purpose of confirming the Resolution passed at the Special General Meeting held on Tuesday 6 March 1951, approving the adoption of the revised bye-laws as amended at that meeting.

Mr. Martin S. Briggs, the Hon. Secretary, then moved, and Mr. A. L. Roberts, the Hon. Treasurer, seconded, that the following Resolution passed at the Special General Meeting on 6 March 1951 be confirmed:—

'That subject to the approval thereof by the Lords of His Majesty's Most Honourable Privy Council the regulations set forth in the printed document produced to this meeting and as amended at this meeting and for the purpose of identification signed by the Chairman thereof be made and adopted as the Bye-laws of the Royal Institute to the exclusion of and in substitution for all the existing Bye-laws.'

The Resolution having been put to the vote of the meeting was passed unanimously.

The proceedings closed at 7.6 p.m.

R.I.B.A. Kalendar
The next issue of the Kalendar will be published in the autumn and members and Students wishing to notify new addresses, etc. for publication should do so as soon as possible. The last date for receiving changes for inclusion in the new Kalendar will be 31 May for those in the United Kingdom and the Republic of Ireland, and for those overseas the last date will be 30 June.

R.I.B.A. Reception 18 May 1951
There will be a Reception at the Institute on Friday 18 May 1951 from 8.15 p.m. to midnight. The President and Mrs. Henderson will receive the guests in the Henry Florence Hall from 8.15 to 9 p.m. and there will be dancing from 9 p.m. until midnight.

Tickets are 15*s.* each. In the first place members will be restricted to one guest each but they may give the names of further guests for whom tickets will be supplied should it prove that accommodation will be available. Application for tickets (with remittance) should be made as early as possible. Evening dress, decorations and presidential badges will be worn.

Payment should be made by crossed cheque or postal order.

British Architects' Conference, Belfast, 30 May-2 June 1951
All members and Students of the R.I.B.A. and all members and Students of the Architectural Association and the Allied Societies are cordially invited to attend the conference. Full particulars and application form were enclosed with the March issue of the JOURNAL.

It will greatly facilitate arrangements if those who propose to attend the conference will fill up the application form attached to the programme and return it to the Secretary R.I.B.A., as early as possible, and in any case *not later than 7 May*. Members should arrange their hotel accommodation at the earliest possible moment.

Annual Subscriptions and Contributions
Members' subscriptions and Students' contributions for 1951 became due on 1 January. The amounts are as follows:

	£	*s.*	*d.*
Fellows	7	7	0
Associates	4	4	0
Licentiates	4	4	0
Students	1	11	6

For members resident in the trans-oceanic dominions who are members of Allied Societies in those dominions, and for members resident overseas in areas where no Allied Society is available, the amounts are as follows:

	£	*s.*	*d.*
Fellows	4	4	0
Associates	3	3	0
Licentiates	3	3	0

Cessation of Membership
The membership of Mr. James Hutchon, of 233 High Street, Kirkcaldy, Fife, Scotland, a Licentiate, ceased on 2 February 1951 under the provisions of Bye-law 23.

R.I.B.A. Final Examination
The following candidate has been awarded a Distinction in Thesis:

Mr. J. A. Leathart [*S*], 49 Welbeck Street, London, W.1.

COMPETITIONS

Competition for a Technical College, Poole
The Dorset County Council invite architects to submit designs in competition for a College of Further Education at Poole, Dorset.

Assessors: Mr. Julian Leathart [*F*] (nominated by the R.I.B.A.), Mr. S. A. W. Johnson-Marshall, B.Arch. [*A*] (Chief Architect, Ministry of Education), Mr. H. E. Matthews

[F] (County Architect, Dorset), Mr. J. Haynes, M.A. (County Education Officer, Dorset), Mr. H. J. Shelley, O.B.E. (Chief Inspector, Ministry of Education).
Premiums : £1,000, £500, £300.
Last day for submitting designs: 1 October 1951.
Last day for submitting questions: 30 April 1951.
Conditions may be obtained on application to the County Education Officer, County Hall, Dorchester, Dorset.
Deposit £1 1*s.* made payable to the County Treasurer.

Competition for the Herzl Memorial, Jerusalem
The Executive of the World Zionist Organization, in conjunction with the Board of Trustees for Herzl's Tomb, invite Jewish architects, sculptors and planners throughout the world to submit designs in competition for the proposed Memorial to Herzl's Tomb, the park and the traffic lay-out of the immediate vicinity.
(*This competition has been restricted to members of the Jewish faith in view of the religious character of the project.*)
Assessors: Mr. B. Locker, Mr. A. Berachyahu (Engineer), Dr. L. Lauterbach, Mr. J. Metrikin (Architect), Mr. J. Pinkerfeld (Architect), Prof. Y. Ratner (Architect), Mr. H. Rau (Architect), Mr. J. Weitz and Mr. N. J. Aslan, A.M.T.P.I. [*A*].
Premiums: I£1,200, I£900, I£600 and additional premiums totalling I£2,300.
Last day for submitting designs: 21 June 1951.
Conditions may be obtained on application to the Secretary, The London Committee, Herzl Memorial, 77 Great Russell Street, W.C.1.
Deposit £2 2*s.*

Competition for a Festival Hall, Wirral
The Wirral Urban District Council invite architects to submit designs in competition for a Festival Hall to be erected at Heswall, Wirral, Cheshire.
Assessor: Mr. P. Garland Fairhurst, M.A. [*F*].
Premiums: £500, £350, £250.
Last day for submitting designs: 28 April 1951.
Conditions may be obtained on application to Mr. Wm. F. Roberts, Clerk to the Council, Council Offices, Heswall, Wirral, Cheshire.
Deposit £2 2*s.*

Proposed New Technical College, South Shields
The South Shields County Borough invite architects of British nationality to submit designs in open competition for the proposed Marine and Technical College buildings to be erected at South Shields.
Assessor: Mr. S. W. Milburn, M.B.E., M.C., T.D. [*F*].
Premiums: £500, £250, £100.
Last day for submitting designs: 21 July 1951.
Conditions may be obtained on application to Mr. Harold Ayrey, Town Clerk, Town Hall, South Shields.
Deposit £2 2*s.*

ALLIED SOCIETIES

Changes in Officers and Addresses
New Zealand Institute of Architects. President, Mr. M. K. Draffin [*F*], 810 South British Insurance Building, Shortland Street, Auckland, C.1.

Northants., Beds. and Hunts. Association of Architects': Annual Dinner and Dance
The annual dinner and dance of the Northants., Beds. and Hunts. Association of Architects was held this year at the Salon, Franklin's Gardens, Northampton, on 5 March, and was attended by some 200 members and their ladies.
Mr. Walter Rosser [*F*], President, was in the chair, supported by a number of distinguished guests, including the President, R.I.B.A., Mr. A. Graham Henderson, A.R.S.A., and Mrs. Henderson, the Mayor and Mayoress of Northampton, the Marquess and Marchioness of Northampton, Sir John and Lady Brown, Mr. Alan Turner, Clerk to Northamptonshire County Council, Mr. C. E. Vivian Rowe, Clerk to Northampton Borough Council, Mr. T. W. Haird [*F*], President of the Leicestershire and Rutland Society of Architects, and Mr. C. D. Spragg, Secretary, R.I.B.A.
The toast of 'The Borough of Northampton' was proposed by Mr. Walter Rosser and responded to by Alderman C. A. Chown, Mayor of Northampton. The Marquess of Northampton proposed the toast of 'The Royal Institute of British Architects', to which the President, R.I.B.A., replied. The toast of 'Our Guests' was proposed by Lieut.-General Sir John Brown, and responded to by Mr. C. D. Spragg and Mr. J. Alan Turner.
After the dinner and toasts the evening was informal, and dancing was enjoyed.

South Wales Institute of Architects: Annual Dinner and Dance
The South Wales Institute of Architects held their Annual Dinner and Dance at the Park Hotel, Cardiff, on 8 February. In the absence through illness of the President, Mr. Edwin Smith, F.R.I.C.S. [*F*], the Chair was taken by Mr. Gordon Griffiths, A.M.T.P.I. [*F*], the Immediate Past President.
The toast of 'The Royal Institute of Architects and the South Wales Institute of Architects' was proposed in an interesting and instructive speech by the Archbishop of Wales, and responded to by Mr. Frederick Gibberd, A.M.T.P.I. [*F*], Vice-President R.I.B.A., and Mr. Gordon Griffiths on behalf of the South Wales Institute of Architects.
The toast of 'The Trade of South Wales' was proposed by Capt. Geoffrey Crawshay, D.L., J.P., Hon. Fellow of the S.W.I.A., Chairman of the Welsh Board of Health, and responded to by Councillor D. T. Williams, deputising for the Lord Mayor of Cardiff.
The toast of 'The Guests' was proposed by Sir Percy Thomas, O.B.E., LL.D., J.P., Past President R.I.B.A., and responded to by Prof. Anthony Steel, Principal of the University College of South Wales and Monmouthshire.
The proceedings terminated with a dance at the Whitehall Rooms, Park Hotel.

Birmingham and Five Counties Architectural Association: Annual Dinner and Dance
The Annual Dinner and Dance of the Birmingham and Five Counties Architectural Association was held at the Grand Hotel, Birmingham, on 1 February 1951. The function was a great success and large numbers of guests were present, including not only the President, R.I.B.A., and Mrs. Henderson, but the Mayors from several of the Five Counties, the Archbishop of Birmingham, and representatives of a large number of professional and other bodies connected with the City of Birmingham, with its University and with the building industry. There were in addition the Presidents of several Allied Societies and the Secretary, R.I.B.A.
The President of the Association, Major G. B. Cox [*F*], presided, and proposed the toast of 'The City of Birmingham'. In reviewing the problems of Birmingham's planning and development, he stressed the importance of saving every yard of agricultural land, and suggested that any further expansion should be vertical rather than horizontal. The Lady Mayoress of Birmingham responded in place of the Lord Mayor, who was indisposed.
The toast of the R.I.B.A. was proposed by Mr. John Betjeman, who complimented Birmingham on the regional character of its architecture during the past century. The President, R.I.B.A., who was that evening attending his third consecutive Allied Society function, responded, and gave a heartening review of the position of the profession.
The toast of 'Our Guests' was proposed by Mr. S. Lunn Whitehouse [*L*], Vice-President of the Association, and was responded to in a humorous speech by Mr. J. A. F. Watson, immediate Past-President of the Royal Institution of Chartered Surveyors.

Devon and Cornwall Architectural Society, Truro Branch: Inaugural Dinner
The Inaugural Dinner of the Truro Branch of the Devon and Cornwall Architectural Society was held at the Red Lion Hotel, Truro, on 2 March. The Chairman of the Branch, Mr. S. Gregson [*F*], presided, and the President R.I.B.A. was represented by Mr. A. L. Roberts [*F*], Honorary Treasurer. The toast of the Royal Institute of British Architects was proposed by Colonel Sir John Carew Pole, D.S.O., D.L., J.P., Vice-Lieutenant of the County of Cornwall. Mr. Roberts responded. The speakers also included Mr. Gregson, Mr. R. F. Wheatley [*F*], Mr. C. Trethowan, Chairman, of the Cornwall Federation of Building Trades Employers, Mr. H. J. Hammick [*F*], President of the Devon and Cornwall Architectural Society, Mr. L. F. Vanstone [*L*], Mr. V. Salisbury [*F*], Vice-Chairman of the Truro Branch, Mr. A. G. Bazeley, M.B.E., M.A. [*A*], Mr. J. Bennett [*F*], and Canon R. H. W. Roberts, Chancellor of Truro Cathedral.

Buckinghamshire Society of Architects: Sketching and Measured Drawings Competition
All students resident in Buckinghamshire or working in an office of a member of the Society who practises in the county are invited to enter for this competition. Prizes of books will be awarded in two classes, Sketching and Measured Drawings. In the first class entries to consist of three sketches of architectural subjects, carried out in any medium; in the second a set of measured drawings of any suitable building in the county, preferably an 18th century domestic building.
Competitors must notify their intention to compete by 26 May. Finished work to be delivered by 18 September. Further particulars from W. Leslie Jones [*L*], Hon. Secretary, Bucks. Society of Architects, 21 High Street, Great Missenden, Bucks.

Royal Architectural Institute of Canada: 44th Annual Assembly
Some 115 Canadian architects assembled for the 44th Annual Assembly of the Royal Architectural Institute of Canada, which took place from 28 February to 3 March 1951 at the Chateau Frontenac, in Quebec City.
The main sessions of the Annual General Assembly were held in the morning on 2 and 3 March. There were delegates present from each of the nine provincial associations of architects in Canada. The most important motion arising from the General Assembly, which was carried unanimously, reads as follows:
'That the Royal Architectural Institute of Canada, convened in Annual Assembly, pledges on behalf of the membership complete support of the architectural profession in the implementation and conduct of the defence programme.'
At a meeting of the 1951 Council held on 3 March the following officers of the Institute were re-elected: *President*, Mr. J. Roxburgh Smith [*F*], Montreal, Que.; *Hon. Secretary*, Mr. Harold Lawson [*F*], Montreal, Que.
At the 1951 Council meeting a recommendation was received from the 1950 Council to the effect that the Institute organization be expanded by engagement of an administrative executive, and that the Institute headquarters

be moved to Ottawa. A motion was passed by the 1951 Council approving the budget presented by the Hon. Treasurer, together with his report, which suggested the expansion of the Institute organization as mentioned.

A seminar having as its subject 'The Architect and the Future Development of the City of Quebec in Relation to its Past' was conducted by Mr. Edouard Fiset of the Chief Architect's Branch of the National Capital Planning Service of Canada. The seminar was supplemented by a bus tour of the City of Quebec the following afternoon.

The Andrew Cobb Memorial Dinner was held on Friday evening, 2 March, and the Annual Dinner on Saturday evening 3 March. At the Annual Dinner the Institute was honoured to have as guest speaker the Right Honourable Louis S. St. Laurent, P.C., K.C., LL.D. Following the dinner an Honorary Fellowship in the R.A.I.C. was conferred on Mr. St. Laurent by the President of the Institute. During the evening's proceedings Prime Minister St. Laurent was gracious enough to present the Massey Medals for Architecture awarded to five Canadian architectural firms in December 1950 by the Massey Foundation.

GENERAL NOTES

The Royal Sanitary Institute: Prize Competitions in 1951

The Royal Sanitary Institute announce the following prizes: The John Edward Worth prize of £40 for an essay on 'The Planning of Old People's Dwellings and the Provision of Communal Facilities and Services in Connection Therewith'.

The John S. Owens prize of £15 for an essay on 'The Ventilation of Dwellings and its Effect upon Human Health'.

Full particulars may be obtained from the Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1.

School of Planning and Research for Regional Development: Diploma Course

The School announces that applications from candidates in Great Britain and overseas are now being considered for entry to the two years' course, leading to the School's Diploma in Planning and exemption from the Final Examination of the Town Planning Institute. The first year's course is a full-time one; in the second year the first term is full-time, the second and third part-time. The 1951-52 session opens on 24 September.

All communications should be addressed to The Secretary, School of Planning and Research for Regional Development, 35 Gordon Square, London, W.C.1 (EUSton 2158/9).

R.I.B.A. Cricket Club

The R.I.B.A. Cricket Club held its annual supper on 8 March, when 20 members of the Club gathered at the 'Unicorn' in Jermyn Street.

The Captain, Mr. Douglas Taylor [*A*], gave a summary of the past year's activities and welcomed the Club's guest, Mr. E. L. Bird [*A*], representing the R.I.B.A. Members entertained each other with stories of the cricket world and elsewhere, and a most enjoyable evening continued until closing time.

The following were elected as Members of the Committee for the coming year: D. S. Taylor [*A*], C. A. R. Norton [*A*], B. S. Smyth [*A*], and R. R. Fairbairn [*A*] (Hon. Sec.).

The following fixtures have been arranged for the coming season:

Sunday 3 June, Blue Circle C.C. (A.A. Ground)

Wednesday, 27 June, Architectural Association (A.A. Ground)

Wednesday 18 July, The Vitruvians (A.A. Ground)

Wednesday 1 August, R.I.C.S. (College of Estate Management Ground, Hinchley Wood)

Thursday 23 August, Club Cricket Conference (Guildford).

It is very much hoped that new members will be attracted to join the Club, as some strong sides are expected to be encountered.

Any Member of the R.I.B.A. who is interested in the Club is asked to contact the Honorary Secretary, R. R. Fairbairn [*A*], 81 Piccadilly, W.1.

A.B.S. Centenary Appeal

We give here a further list of donations received by the Architects' Benevolent Society in answer to the Centenary Appeal. The total at 29 March was £6,732 5*s*. 7*d*.

P. L. H. Wakefield, £1 1*s*.; B. I. Day, £2 2*s*.; H. J. Higgs, £5 5*s*.; G. W. Fairbairn, £2; A. Steele, £1 1*s*.; E. Frankland, £1 1*s*.; A. N. Sturt, £1; T. T. Cumming, £3; A. H. Powell, £1 1*s*.; Miss B. M. Beatty, £10; W. E. Mayer, £1 1*s*.; D. J. Oliver, £2; G. G. Baines, £1 1*s*.; E. H. Honeyburne, £1; W. L. Jones, £1 1*s*.; Seely and Paget, £5 5*s*.; J. H. Moya, £3 3*s*.; J. W. Murray, £1 1*s*.; G. E. Burgess, 10*s*. 6*d*.; J. R. Tomlinson, £1 1*s*.; R. J. Killick, £1 1*s*.; E. F. Peat, £1 1*s*.; Geo. J. Bragg, £2 2*s*.; Philip Powell, £3 3*s*.; R. J. Hurst, £10 10*s*.; Peter Woore, £1 1*s*.; R. W. Thompson, £1 1*s*.; J. F. Bateman, £1 1*s*.; W. J. Hemmings, £1 1*s*.; H. Geake, £1 1*s*.; D. W. Mitchell, £7; M. C. Froud, 5*s*.; N. J. Harris, £2 2*s*.; Unsworth and Bostock, £5 5*s*.; G. H. Anderson, £1 1*s*.; Anthony Rossi, 10*s*.; Simpson Low, £2 2*s*.; W. Church de la Porte, £11; Quiggin and Gee, £31 10*s*.; A. T. Nicholson, £1 1*s*.; Watkins, Coombes and Partners, £2 2*s*.; Baldry and Gabb, £2; Lynton S. White, £5.

G. L. Thorne, £3 3*s*., P. H. Warwick 10*s*. 6*d*.; Herbert Collins, £5; F. Henshaw, £3 3*s*.; W. H. Saunders and Son, £3 3*s*.; C. H. B. Smith, £2 2*s*.; W. J. Carpenter Turner, £2 2*s*.; Anon., £5 5*s*.

S. J. Clewer, £2 2*s*.; Miss M. W. Harries, £1 1*s*.; Hugh Scott-Willey, £2 2*s*.; Surrey County Architect's Department, £5 5*s*. 6*d*.; H. Fayers, £1 1*s*.; R. Gardner-Medwin, £2 2*s*.; Yorks and East Yorks Architectural Society, £21; Staff of the Road Haulage Executive, £2 12*s*. 6*d*.; Ronald Ward and Partners, £5 5*s*.; A. E. Whitehouse, £1 1*s*.; Arthur Turner and Son, £2 2*s*.

H. E. Rowland, £2 2*s*.; J. W, Beak, £1 1*s*.; F. Chambers, £2 2*s*.; W. H. Quemby, £2 2*s*.; Riches and Blythin, £2 2*s*.; C. Masey, £5 5*s*.; D. Joel, £2 2*s*.; J. H. Cox, 10*s*.

Broadhead and Royle, £2 2*s*.; W. E. Norman Webster, £3 3*s*.; H. G. Lambert, £1; South-Eastern Society of Architects, Canterbury Chapter (proceeds of dance), £14 19*s*. 1*d*.; Gerald Sanville, £5 5*s*.; Humphrey M. Gimson, £3 3*s*.; South-Eastern Society of Architects, Canterbury Chapter, £10; J. E. March, £10 10*s*.; H. D. Bodley, £1; G. E. Harris, £1 1*s*.; W. F. C. Holden, 10*s*.; J. H. Stevens, £1 1*s*.; Miss D. C. Evans, 5*s*.; Wilts and Dorset Society of Architects, £25; J. A. Whittaker, 10*s*.; J. C. Charter, £5; L. Grahame-Thomson, £5 5*s*.; W. L. Lowe and Partners, £1; R. H. Maddock, £2 2*s*.; A. G. Sutton, 10*s*. 6*d*.; Miss J. G. Staley, 10*s*.; West Yorks Society of Architects, £75; Anon (Preston), 5*s*.; J. White, £1; Arthur H. Hope, £2 2*s*.; F. Keith Aitken, £2; E. L. Thompson, £2 10*s*.; A. Birkhead, 1*s*. 9*d*.; Taylor and Young, £21; R. P. Lay, £5 5*s*.; H. G. Baker, £1 1*s*.; R. C. Arnold, £2 2*s*.; R. C. Cunningham, £2 2*s*.; Miss Hilda Thornton, £1 1*s*.; O. G. Howell, £1 11*s*. 6*d*.; Bradshaw, Gass and Hope, £50; Notts, Derby and Lincoln Architectural Society, £33 7*s*. 1*d*.; A. Brocklehurst, £5; J. W. Hiles, £3 3*s*.; E. H. Moorey, £1 1*s*.; F. J. Dalton, £2 2*s*.; H. V. M. Roberts, £2 2*s*.; A. B. Carter, £5 5*s*.; Miss E. Gabriel, 10*s*. 6*d*.

Membership Lists

ELECTION: 3 APRIL 1951

The following candidates for membership were elected on 3 April 1951.

AS HON. FELLOW (1)

H.R.H. The Duke of Edinburgh, K.G.

AS HON. ASSOCIATES (2)

Oswald: Arthur Stanley, M.A. (Cantab), Lingfield.
Rosse: Earl of, Laurence Michael Harvey, M.B.E., Doncaster.

AS FELLOWS (13)

Begg: Kenneth Andrew [*A* 1929], Entebbe, Uganda.
Bunyan: James [*A* 1929], Glasgow.
d'Avoine: Pierre Avicenna [*A* 1934], Bombay, India.
Drury: George Burrows, Dipl.Arch. (Leeds) [*A* 1933].
Foster: Robert Oswald [*A* 1937], Buckhurst Hill.
Holt: Felix [*A* 1921], Liverpool.
Joglekar: Shridhar Krishna [*A* 1942], New Delhi, India.
Lidbetter: Hubert Martin [*A* 1938].
Shewan: William Wyllie Clarke [*A* 1929], Hongkong.
Talpade : Jayavant Ramrao [*A* 1939], Calcutta, India.
Yardi: Sadashiv Raghunath, A.M.T.P.I. [*A* 1941], New Delhi, India.

and the following Licentiates who have passed the qualifying Examination:

Hendry: William Fyfe, Salisbury, S. Rhodesia.
Sharpe: Kenneth Leslie, Morden.

AS ASSOCIATES (87)

Ainsworth: Ronald Arthur, Lancaster.
Anderson: Bernard Lewis, Hull.
Andrews: Bernard George, Cheltenham.
Bailey: Harold, Chorley.
Baker: Christine Anna Sherwood (Miss), Dip.Arch. (Manchester), Manchester.
Bancroft: Francis John, Burton Joyce.
Barker: Graeme Charles, Nairobi, Kenya.
Bhatt: Bhanuprasad Ganpatlal, Bombay, India.
Bishop: Arthur, Southport.
Bishop: David William, Southampton.
Blampied: Michael Renouf.
Boyle: Kenneth Joseph, B.Arch. (Liverpool), Liverpool.
Bradford: James Henry [*L*], Salisbury, S. Rhodesia.
Bruckland: John Frederick.
Burnett: Douglas John, B.Arch. (Liverpool), Budleigh Salterton.
Campbell: Ian Ley Duncan, Rye.
Carse: Eric Setrey.
Chessum: Bryan Carrington.
Cole: Sylvia Sara (Miss).

Connell: James Joseph, B.Arch. (Dublin), Dublin.
Curley: Henry, Dip.Arch. (Cardiff), Whitchurch, Glam.
Davies: Anthony Hinchcliffe.
Duckworth: Richard Bryan, Manchester.
Errington: John, B.Arch. (Dunelm), Chester-le-Street.
Fowell: John Digby, Sydney, N.S.W., Australia.
Fuller: Adrian Bevis, Dip.Arch. (Nottm), Nottingham.
Ghadiali: Jal Hormusji, Poona, India.
Gibb: John Anderson, D.A. (Glas.), Stranraer.
Gibbons: Peter Philip, Birmingham.
Good: Anthony Ernest.
Hallam: Clifford George Royce, Nottingham.
Harrison: William Colquhoun, D.A. (Glas.), Glasgow.
Harwood: Leonard Charles, Oxford.
Hastilow: Noel, Birmingham.
Hayes: Eric Reginald.
Hayes: Terence Benjamin, Plymouth.
Healy: Joan (Miss), B.Arch. (Dublin), Dublin.
Hewish: Ronald Arthur, Orpington.
Holland: Leonard Sidney.
Holt: Michael Edward, Dip.Arch. (Nottm), Nottingham.
Hooper: John Downing, Dip.Arch. (Leics), Maidstone.
Jones: George Wilkes, B.A. (Arch.) (Manchester), Manchester.
Keen: Frederick Jack, Stoke-on-Trent.
King: Emily Muriel Daphne (Mrs.), Croydon.
Knight: John Richard Gordon, Cambridge.
Lefkovitch: Alfred, Dip.Arch. (The Polytechnic.)
Lewis: David Meredydd, Dip.Arch. (Cardiff), Cardiff.
Macdonald: Kenneth Roderick, Gateshead.
MacGillivray: Peter Lauchlan Macdonald, Inverness.
McIntosh: Frederick Malgrine Dalgetty, D.A., (Dundee) Perth, Scotland.
MacIver: Angus Lewis, M.A. (Cantab), Ross-on-Wye.
Marflitt: John William, Hull.
Matthew: James Ford, D.A. (Dundee), Dundee.
Merewether: Edward John, Turramurra, N.S.W., Australia.
Methuen: John Allin, Umtali, S. Rhodesia.
Montague: Hubert John, Bushey.
Moore: Ian Frederick, B.Arch. (Liverpool), Morden.
Morris: Richard Francis, B.Arch. (Dublin), Dun Laoghaire.
Muchall: James Bernard, Morpeth.
Napier: John Augustus, Dip.Arch. (Cardiff), Cardiff.
Potts: Alan John, Letchworth.
Purkis: John Cecil, Malvern.
Ramsden: Beryl (Miss), B.A. (Arch.) (Manchester), Manchester.
Rao: Devanahalli Venkanna Raghavendra, B.Arch. (L'pool), Bangalore City, India.
Rhodes-Harrison: George William, B.Arch. (Rand), Bloemfontein, S. Africa.
Richardson: Derek John, Cheadle Hulme.
Rose: Edgar Alan, Dip.Arch. (Manchester), Prestwich.
Rowlands: Elisabeth Chorley (Mrs.).
Samuels: Gerald.
Savage: Cecil Payne, Belfast.
Sharp: Derek Joseph, Horsham.
Shaw: William John Robert, Herne Bay.
Simon: Leslie, B.Arch. (Rand), Johannesburg, S. Africa.
Slade: Howard John, Dip.Arch. (Leics), Llangefni.
Smyth: Thomas, D.A. (Edin), Edinburgh.
Story: Raymond Dennison, B.Arch. (Dunelm), Whitby.
Stott: Derek Taylor, Rochdale.
Sweet: John Macaulay, B.Arch. (Liverpool), Usk.
Tench: George Douglas, Blaydon-on-Tyne.
Thomas: Harries.
Thompson: Clive Beaumont, Dipl.Arch. (Leeds), Harrogate.
Turner: Frank, West Hallam.
Vaughan: John Maxwell, B.A. (Lond.), Winchester.
Watson: Gordon Inglis, Hull.
Whitton: Robert Farquharson, D.A. (Dundee), Dundee.
Wilson: John, D.A. (Dundee), Cupar.
Zikmann: Edward Ithiel, Pretoria, S. Africa.

AS LICENTIATES (6)

Clarke: Russell Frederic Rasdell, Plymouth.
Clough: Dennis Maskew, B.A.Oxon.
Gaulton: Eric Noel, Southampton.
Howell: William Thomas George, Belfast.
Reffitt: Joseph Slater, Bradford.
Webster: Norman Neville, Spalding.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. E. C. Coleman Hicks [*F*] has taken up the appointment of Architect to the State Bank of Pakistan and the National Bank of Pakistan. His address is State Bank of Pakistan, Central Directorate, Ingle Road, Karachi, and he would be pleased to receive trade catalogues, etc. with prices C.I.F. Karachi and Chittagong.

Mr. Geoffrey Wilson [*A*] has been appointed Architect to Messrs. Samuel Webster and Sons, Ltd., Brewers, 57 Northgate, Halifax, Yorkshire, and will be pleased to receive trade catalogues, etc.

PRACTICES AND PARTNERSHIPS

Messrs. Cook and Culling (Mr. R. P. Cook, F.R.I.C.S., and Mr. P. E. Culling [*A*]), Nelson Chambers, Meeting Lane, Kettering, have taken into partnership their Chief Assistant, **Mr. M. S. Illingworth** [*L*]. The practice will continue under the style of **Cook, Culling and Illingworth** at the same address.

Mr. G. B. Cox [*F*] (**Messrs. Harrison and Cox**) has taken into partnership his Senior Assistant, **Mr. Bernard V. James** [*A*]. The name of the firm remains unchanged, and the practice will continue from 85-87 Cornwall Street, Birmingham, 3.

Mr. W. N. M. Miles [*A*], formerly practising at 5 Rodney Place, Clifton, Bristol, has taken into partnership **Mr. Gerald Wills** [*A*], lately Deputy Housing Architect to the Bristol Corporation. The title of the firm will be **Miles and Wills** and, as from 1 May 1951. practice will be carried on from 3 St. Paul's Road, Clifton, Bristol 8.

CHANGES OF NAME AND ADDRESS

The title of the firm of **Culpin and Son** (**Mr. Clifford E. Culpin** [*F*] and **Mr. W. W. Ryder** [*A*]) has been changed to **Clifford Culpin and Partner.** The partners will remain as at present, and the practice will continue at 3 Southampton Place, London, W.C.1.

The firm of **Braddell and Bird** (**Mr. Darcy Braddell** [*F*] and **Mr. Pelham Bird** [*A*]), formerly **Braddell and Deane,** of Victor House, 1 Baker Street, London, W.1, will in future practise at 6 Bedford Row, London, W.C.1. (CHAncery 5811.)

The new address of **Mr. S. G. Kamath** [*A*] is Architect's Section, Public Works Department, Fort, Bombay 1, India.

The new telephone number of **Messrs. Hammett and Norton** [*A*/*A*], who practise at 29 Sackville Street, Piccadilly, London, W.1, is GROsvenor 5987/8.

Messrs. Adamson, Gray and Adamson (**Mr. J. E. Adamson, Mr. A. L. Gray** [*A*] and **Mr. H. E. D. Adamson** [*A*]) have removed from 53 Gt. Ormond Street to 11 Portman Street, Portman Square, London, W.1.

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow (47), practising in London, wishes to contact established and busy firm or group with view to partnership or association. Capital available if required. Box 6, c/o Secretary, R.I.B.A.

Associate seeks partnership or senior position leading thereto. London area preferred but not essential. Capital available. Box 25, c/o Secretary, R.I.B.A.

Small West Country rural practice in a market town for disposal. Lease of offices, reasonable inclusive rent with light and heat. Box 26, c/o Secretary, R.I.B.A.

FOR SALE

Contents of architect's office near Leeds for disposal owing to retirement. Plan chests, cupboards, boards, tee-squares and other sundries. Full particulars supplied. Box 11, c/o Secretary, R.I.B.A.

ACCOMMODATION WANTED

Member requires single office room in London area with facilities for sharing telephone, secretarial services and perhaps staff. Box 27, c/o Secretary, R.I.B.A.

The Architects' Special Motor Car Insurance at Lloyds

The Architects' Benevolent Society's Insurance Committee in conjunction with a firm of Lloyd's Insurance Brokers have devised a Special Motor Car Policy for Architects. This policy and the special advantages to be gained from it are available only to members of the Royal Institute of British Architects and its Allied and Associated Societies.

SPECIAL FEATURES INCLUDE:

Discount of 17½ per cent.

Free Manslaughter Indemnity up to £250.

Agreed Values.

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